40 Rock

POPULAR Computing WEEKLY

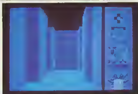
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10-16 October 1985

It's the best selling weekly

Vol 4 No 41

CBM turns to Amiga as 128 hits shops



IN its latest set of releases Ariolasoft will include both Batalyx – a multi-part arcade game from Jeff Minter – and Scarabeus written by Hungarian program developers Andromeda Software

Scarabeus, pictured above, is an unusual maze style game with elements of IQ test pictorial puzzles Over three, ever larger mazes you must recover a series of nine hieroglyphs by tracking and catching ghosts The pattern of pictures then forms a key to solving the later levels

Scarabaeus, along with Batalyx and an adventure construction program called Wizard, will be issued on disc at £12 95 and cassette at £9 95 later this month

WITH COMMODORE'S 128 micro finally beginning to reach the shops, the company is now turning its attention to attracting strong software support for the Amiga

The company hopes to outdo Atari's impressive display of initial software at the *Personal Computer World* Show (see *Popular Computing Weekly*, Sept 5) To this end, NTSC standard Amiga development machines with a separate power supply are now being sold to software companies for between £1 340 – for a model without a monitor – and £1 700 with a monitor The package includes system discs utilities discs and technical documentation

"I must stress that these are prices for the development machines only, and not for the general release," said Commodore marketing manager Chris Kaday However, he added that, when released, the price would be less

The cost of development systems would seem to suggest a shop price of between £1,000 and £1,500 in the UK

Three development machines have already been delivered, and ten further software houses are waiting for their machines having paid the money

"Then there are 20 more after that which have expressed firm interest," said Gail Wellington, Commo-

continued on page 4 ▶

Amstrad profits reach record level of £20m

AMSTRAD proved it is not falling prey to the troubles which have hit many of its fellow manufacturers by announcing record financial results for year ending June 30 1985.

Its pre-tax profits of £20 1m showed an increase of 122% over previous year, while turnover at £136 1 million was up 60%

Amstrad's business is concerned with audio units, colour televisions and computer hardware, software and peripherals Computers accounted for 66% of its sales, this year as opposed to 4% the previous year Amstrad micros sold particularly well overseas, notably in France and Germany

The results mean that Amstrad's chairman, Alan

continued on page 4 ▶

Popular Computing Weekly MICRO MAGIC



Find out if you have won an Amstrad 6128 this week or at least some special *Popular Computing Weekly* cassette labels. Enter your personal Micro Magic number into our special computer program on page 8

INSIDE) TURN YOUR MEMOTECH INTO A SPECTRUM – SEE PAGE 10

AND ON THE EIGHTH DAY EPYX CREATED...

SUMMER GAMES II

Experience the thrill of top international competition in your own home! Summer Games II brings it all to you with eight challenging new events. You and up to seven other contestants can compete in your favourite individual event or go for it all in the grand competition. Some events, like cycling, rowing and fencing even challenge you with realistic head-to-head competition.

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EPYX COMPUTER SOFTWARE

CONTENTS

Vol 4 No 41



EDITORIAL

How much could you imagine spending or persuading your parents to spend on a new micro? Most of the evidence suggests that £200 might be the current average sum, while most people seem to believe that the absolute top whack for any home machine in this country is about £500. From this we have the assumption that whilst the Atari 260ST (one of Tramiel's computers for 'the masses not the classes') is, at £450, a top end home machine, the Amiga at around £1,000 never could be.

But even £450 seems a large jump from £200, yet it looks like becoming close to the norm for most new computers. The price threshold is inevitably going to rise, because of the new machines' indirect consequences. For example who would ever think of trying to load 256K from cassette? Thus a disc drive becomes an inevitable feature of the micro rather than an optional peripheral.

Would you pay £500 for a computer? There are plenty of people who doubt it who envisage Spectrums and Commodores hanging on for years. That would be bad from a technical innovation point of view and for the market processes that cause the price of new technology to drop.

There are reasons to be optimistic though, mainly because that average figure of £200 is highly misleading. After all if you have bought a BBC B, disc drive and colour monitor you've probably spent the price of an Amiga. A Commodore 64 plus disc drive would approach the price of the 260ST.

Could you spend £500 on the right micro? Could you spend £1,000? What happens to home micros may depend on your answers.

Editor David Kelly **News editor** Christina Erskine **Features editor** Graham Taylor **Software editor** John Cook **Staff writer** Marcus Croft **Production editor** Lynne Constable **Editorial secretary** Lucinda Lee **Advertisement manager** David Lake **Assistant advertisement manager** Jeremy Kite **Advertisement Executive** Diane Holyoak **Classified executive** David Osen **Administration** Geraldine Smyth **Managing editor** Duncan Scot **Publishing director** Jenny Ireland **Published by** Sunshine Publications Ltd, 12-13 Little Newport Street, London WC2H 7PP Tel 01-437 4343 Telex 296275 **Typeset by** Publishers Reprographics Services Ltd 4 Rogar Street London WC1 **Printed by** Greenaway Harrison, Sutton Road, Southend-on-sea, Essex. **Distributed by** S M Distribution London SW9 Tel 01 274 8611 Telex 261643 © Sunshine Publications Ltd 1986

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How to submit articles Articles which are submitted for publication should not be more than 3000 words long. The articles and any accompanying programs should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here – so please do not be tempted. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

Computer Trade Association Magazine of the Year

Sinclair market lead reaches new high in AGB survey

A NEW home computer survey conducted by Audits of Great Britain (AGB) has given Sinclair a remarkably high 36.8% share of the British market.

The survey was carried out in the four weeks ending September 7, and so at a traditionally quiet time. However, Sinclair's share jumped 20% up from the same period last year.

It seems that Dixon's £139.99 offer on the Spectrum Plus, and the subsequent bundled packs put together by many independent distributors, have been extremely successful, since the Spectrum Plus accounts for 30.5% of sales, according to AGB's survey.

The price cut on the QL, from £399 to £199, has been followed by a rise to a 5.8% market share for the troubled machine.

"Since the survey we have seen that the price drop on the QL has had a huge impact on sales," said Sinclair's marketing manager Alison Maguire.

These results may well convince Sinclair that the Spectrum Plus and 128K QL will serve it well through Christmas, rather than introducing a British version of the Spanish Spectrum 128K, or adding more memory to the QL.

"We have no plans to launch the machine here," said Alison Maguire. "It is however an option for next year. One or two companies in Britain have development machines, but that is to produce software for the Spanish market."

Amstrad's results

◄ continued from page 1

Sugar, who owns 50.2% of the company is now worth £64



million – Amstrad's shares hit a record level of 134p at the announcement of the figures.

Alan Sugar has promised that Amstrad's next major launch will be an audio unit containing a compact disc player, which has given rise to speculation that a CD Rom unit is also being planned.

"CD Roms are definitely the thing for the future but not the sort of future Amstrad is concerned with at the moment. As usual with Amstrad, we'll announce it when we've got it," said Amsoft's head William Poel.

◄ Alan Sugar, Amstrad's chairman

Firms book in for *Horizons* show

MORE DETAILS on the *Commodore Horizons* Show to be held at the end of this month have now been released by organisers, Editionscheme.

Exhibitors at the show, now at a new venue, the Tech West Centre, Warple Way, Shepherd's Bush, London W12 include Ariolasoft, Argus, CDS, Llamasoft, Precision, ICPUG, Vulcan, Robcom, Newsfield, Martech and Gultronics.

The show will be held on Saturday and Sunday, October 26-27. The venue can be reached from Shepherd's Bush Tube, Acton Central BR station, or Uxbridge Road. There's also a free bus service between Shepherd's Bush Tube, the Novotel (originally intended to be the site of the show) and Tech West.

For details contact Editionscheme on 01-346 8596.

CBM turns to Amiga as 128 hits the shops

◄ continued from page 1

dore's European software manager.

Among the interested companies are Mirrorsoft, which plans *Fleet Street Editor* and probably *Strike Force Harrier* for the Amiga, Hisoft, which will be converting its range of languages, Pascal, Devpac and C, and also writing a series of new titles, The Edge, Virgin, which wants to develop a range of sophisticated games, and Electric Dreams the division of Activision set up by Rod Cousens, which hopes to convert *I, of the Mask*.

In addition Commodore has firm plans to bring over US titles such as *Textcraft*, *Graphicraft*, *Musicraft*, *Moviecraft* (an animation program), *Calccraft*, Logo, C, and Metacomco's Pascal and Lisp, all of which appear under Amiga's name in the States. In Britain, these may well be branded under Commodore's name.

The C128 micro began to appear in the shops last week, around a month later than originally intended. The first recipients of C128s, in batches of single figures, have been the smaller independent stores – the machine has yet to reach the multiples.

The only configuration of the C128 available so far, is the stand alone version of the micro, at £269. The bundled version, the micro plus 1570 disc drive, and the 128D version with built in disc drive, have not yet been released.

"We are now shipping 128s, and peripherals will follow shortly," said Chris Kaday. "We are shipping to satisfy demand, but it takes time to build up distribution."

Big Daddy signs with Melbourne

MELBOURNE HOUSE has announced two more licensing tie-ups for games to be released within the next month.

Pop duo Wham! is to lend its name to *Wham! The Juke Box*, a two channel music program for the Spectrum Plus. The user can learn to play a selection of Wham!'s greatest hits, its new single, and finally compose on the Spectrum itself. *Wham! The Juke Box* will cost £9.95.

Big Daddy's Rock and Wrestle is the follow-up to the highly successful *Exploding Fist*. Using the same graphics and animation techniques *Big Daddy's Rock and Wrestle* features a two-player wrestling bout accompanied by rock-style music.

Big Daddy's Rock and Wrestle will be out on the Commodore 64 at £9.95.

Home sweet home for *Popular*

SCOT Press Ltd., publishers of *Popular Computing Weekly*, is pleased to announce that it has purchased *Home Computing Weekly* from Argus Specialist Publications Ltd.

Home Computing Weekly's issue dated 8 October is its final edition. Its most popular features are to be incorporated into *Popular Computing Weekly*.

"We are very pleased to have reached this agreement with Argus. *Popular Computing Weekly* is now secure in its position as the only weekly magazine serving the consumer computer market," said Duncan Scot, managing director of Scot Press Ltd.

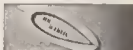
Surf's up for New Concepts

IRISH company New Concepts has announced a simulation game with a difference.

Surf Champ uses a miniature surf board as a keyboard overlay for the Spectrum. The player must press the surf board with the flat of the hand, applying pressure in the relevant parts to ride the waves successfully. The waves are depicted on the screen display.

New Concepts claims that the overlay provides "maximum realism in the game" and that it is "operated in a manner not unlike that of the conventional surfboard".

Surf Champ will be available initially for the rubber keyed Spectrum 48K at around £12, but surfboards for the Spectrum Plus and other machines are planned.



Details from New Concepts, Dublin St, Carlow, Co. Donegal (0503 32492).

Dispute over GEM screens settled by Apple and DR

APPLE Computers has forced Digital Research to substantially change its screen presentation of programs written under GEM the portable operating system which uses windows, icons and menus similar to that on the Apple Macintosh. The dispute, concerning the similarity of DR's screen display, has been settled out of court after around six months of discussion

The changes will avoid Apple's claims that *GEM Desktop*, *GEM Paint* and *GEM Draw* violate Apple's copyrights

"Apple claimed that our artistic representation was too close to theirs," said Frank Iveson of Digital Research "It wasn't a question of changing any of the code, simply the screen layout.

"We were trying to reinforce an industry standard, so it's something of a credit to GEM that Apple got upset."

The 'new look' GEM will be shipped in a few weeks time Users of 'old style' GEM programs will find the new appearance incorporated into future upgrades

Virgin releases Rabbit titles

THE FIRST titles under the revived Rabbit label will be appearing within the next week

The name of the company, which crashed around eighteen months ago, was bought by Virgin Games, which is using the name Rabbit to release games at £3 99, approaching budget price

The first four titles are *Zyto*, a multi-screen, multi-layered arcade game, for the Commodore 64, *Donath*, an arcade adventure revolving spells, keys, potions and amulets, also for the Commodore 64, *The Great Fire of London* for the Spectrum, which casts you in the unenviable role of Lord Mayor attempting to stop the fire from spreading and finally, *High Rise Horror*, an arcade game for the BBC B

664 upgrades launched at Amstrad fair

THE Amstrad Computer show took place at London's Novotel on October 5-6 Provisional estimates put the number of visitors at around 10,000

DK'Tronics took the opportunity to launch a new range of Amstrad peripherals including memory upgrades for the 464/664

The extra 64K memory will give the machines a degree of compatibility with the 6128 micro "Any software using bank switching and system calls should work – but not those with basic commands, as there are no Roms," said Neil Rawlinson of DK'Tronics

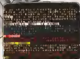
The 64K expansion will cost £49 95 A 256K expansion will also be made available at £99 95, as will a 256K silicon disc designed to be used in conjunction with a conventional disc drive Data can be transferred from the ordinary disc to the silicon disc Programs can then work on data stored on the silicon disc at very high speeds

Also at the show, Camana was demonstrating MicroPro's *Pocket Wordstar* version of the long standing *Wordstar* business word processor The Amstrad *Pocket Wordstar* costs £119

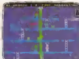
Sagesoft announced its *Popular Accounts* program for the PCW 8256 at £99 95 and a package comprising *Popular Accounts* and *Payroll* at £149 99

Games were on display from Alligata *Defend or Die* (£7 95), *Super Sam* (£2 99), *Doppelganger* (£8 95) or all three on one disc at £12 95 – Interceptor showing *Warlord* and its more established titles *Heroes of Karn*, *Jewels of Babylon* and *Arabian Nights*, and Xuma Computers, among others

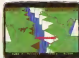
SILVER RANGE... Seeing


THE HELM Adventure
An amusing, stylish text adventure


HELICHOPPER Arcade
Fast and smooth multi-screen action


MR FREEZE Arcade/Strategy
Six compartments, each tougher to de-ice


CHICKIN CHASE Arcade
Ruling the roost can be a hard life


SUPER RIDER Arcade
Equestrian extravaganza - will you go the course?


DUCK! Arcade
Comedy and music in this novel duck shoot


CYLU Arcade Strategy
Can you complete this supreme test of logic and skill?


CAVERNS OF ERIBAN Arcade
Supply the mines against terrible odds


SUBSUNK Adventure with Graphics
Trapped on the sea bed in a scuppered submarine

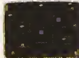

VIKING RAIDERS War Game
A test of strategy against the computer or friends


RUN BABY RUN Arcade
Multi-car cop chase and shoot-out


SPIKE Arcade/Strategy
Help Spike to find the golden Dream Sphere


DON'T PANIC Arcade/Strategy
Amusing and challenging a game with a difference


DON'T BUY THIS! Compilation
Five of the worst games you have ever seen


THE HACKER Arcade/Strategy
Terminal to modem, telephone network to mainframe

Letters

Good news

It is good news that Memotech has made significant price cuts on its machines

At £80 the MTX500 must be the best buy on the market I hope it does well

Max Fisher
Accrington
Lancs

Program help

We are a national charity set up to help parents and professionals dealing with Down's Syndrome children. Our membership now stands at approximately 4,500 and many of these children seem to have an aptitude for computer games and educational programs As a result of this, we have had several enquiries over the past year as to what is available in computer software that may be of help to parents and teachers

May I appeal to any software manufacturers who could let us have lists of what is available so that we can pass this on to our members.

Many thanks

Maggie Emslie
Director
Down's Children's
Association
4 Oxford Street
London W1N 9FL

Attribute effects

Following up a letter in *Popular Computing Weekly* (Vol 4 No 36), entitled New Concept, I wrote the following program Try it and see the amazing effects it has

```
5 REM FOR SPECTRUM
10 LET INK=32
20 FOR I=22528 TO 23296
30 POKE I,INK
35 LET INK=INK+1
37 IF INK=101 THEN LET IN
K=0
40 NEXT I
50 FOR i=64 TO 87:POKE 23
681,1:LPRINT"(32 graphics
 blocks)":NEXT i
60 FOR i=64 TO 87:POKE 2
681,1:LPRINT"(32 spaces)"
:NEXT i
```

with the attributes (Note *Ink* in the listing is a variable name in lower case – not the keyword) Lines 10 to 40 set up the attributes, and Lines 50 to 70 do the fade change

Nigel Clarkson
Crossgate Moor
Durham

On second thoughts maybe it would better to use the cursor keys after all

Thanks Nigel. . . in fact we're collecting short programs, machine code routines, tips and hints for a new feature in Popular. Send your favourite to us, addressed to Bytes and Pieces, 12-13 Little Newport St, London WC2.

Impressive

Impressed? Very! Why? Because quite simply Mike Gornall's disassembly listing of his program *Invisible Music* (August 15) was magic

OK, the program itself was nothing to write home about I could have quite happily typed in all 77 items of data and still have been none the wiser as to how his program functioned

But there below his data statements was a complete disassembly of his program Rem statements abounded.

I now feel that building an interupt-driven program is definitely not beyond my meagre abilities

May I also let readers in the Peterhead area know that there is a Commodore computer club that meets every Thursday at 7 30pm in Peterhead Community Centre

R Brunsma
11 Hawthorn Road
Peterhead
Aberdeenshire

Micro Magic

Popular Computing Weekly

Micro Magic

Popular cassette labels

The Amstrad CPC6128

We are giving away an Amstrad CPC6128 128K micro – worth £399 – every seven days until Christmas. Not only that, but every Micro Magic card is a winner -- every card wins a runner-up prize of free Special *Popular Computing Weekly* cassette labels

How to find out if you win this week

To find out if you are a prize winner this week this is what you must do

1) Key in the computer program listing printed here into your micro and *Run* the program

2) Input your special **Micro Magic** number as data in the program when requested and press *Enter*

3) The program will tell you if you have won a prize this week and what it is

4) If you have won a prize you can claim it by filling in the coupon on the back of your special **Micro Magic** card **Then send the completed card off to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.**

Don't forget to fill in both your name and address, and also both your winning **Micro Magic** answer from this week and your special **Micro Magic** number

5) If you haven't won this week don't give up hope Keep your **Micro Magic** card and use it to find out if you win with next week's Micro Magic computer program The same card will last you right through to Christmas, so don't throw it away – you could miss the opportunity to win

```
5 PRINT "Input your personal Micro
 Magic number"
10 INPUT x
15 FOR y =1 TO 2
20 LET [illegible]
30 LET [illegible]
40 LET [illegible]
45 NEXT y
50 IF y=439000 THEN GOTO 70
55 IF y=901544 THEN GOTO 80
60 PRINT "Your matching Micro Mag
ic number is ";y
61 PRINT "Better luck next week "
65 GOTO [illegible]
70 PRINT "Your matching Micro Magic
 number is ";y
72 PRINT "You have won an Amstrad
 [illegible]"
75 GOTO 10
80 PRINT "Your matching Micro Magi
c number is ";y
85 PRINT "You have won cassette la
bels"
90 GOTO [illegible]
```

Micro Magic: Week 2 Program listing

This week's winning Micro Magic Numbers: 439000 and 901544

If you think you've won complete the form on the back of your Micro Magic card and send it to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Micro Magic cards can only be obtained in line with the criteria outlined by Scot Press Participants are entitled to only one card each Cards and accompanying documentation can be obtained free of charge by writing to Scot Press 12-13 Little Newport Street, London WC2H 7PP

Media Waves

Micro Live makes a welcome return to our TV screens this autumn in a new 30 minute weekly slot, starting this Friday at 7 30pm. The tried and tested team of Lesley Judd, Ian McNaught-Davies ('Mac' to the computing fraternity – 'Big Mac' to the hamburger eating fraternity) and Fred Harris will be with us over the next 20 weeks presenting a pot-pourri of micro-related features and news, together with some special editions focusing on one particular area of computing activity

Station	Programme	Broadcast Time
BBC2 TV	Micro Live	11th October 7.30-8 00pm
BBC Radio Sussex	The Computer Programme	12th October 3 50pm
Swansea Sound	Lunchbox	15 October 1 30-2.00pm
Moray Firth Radio	The Mighty Micro	Monthly
		Mondays 7 00-8 30pm
Radio Broadland	The Computer Programme	18 October 7 00pm
Radio Broadland	Broadland Beat	10 October 8 45pm
Radio Orwell	Nick Coudy s Computer Spot	12 October 11.20am
BBC Radio Manchester	Computers	12 October 8.45pm

Lined up for the October 11 issue are such items as Computer Animation and Speach Synthesis (with special emphasis on its use by the disabled) They'll also be looking at the fine print in home computer maintenance contracts, and will hold a discussion on the lack of confidence currently being shown within financial circles in the computer industry

With heavyweights such as Bill Gates (founder/chairman of Microsoft) and Roger Foster (chairman of ACT) taking part, it'll certainly be worth a look.

Game choice

Hardware *Memotech Speculator* **Price** £39 95 **Supplier** Memotech Ltd, Station Lane Estate, Witney, Oxon.

About this time last year Spectrum emulators were the in thing They were reported as 'soon being available' for micros as diverse as the QL and the Commodore 64 Unfortunately all these wonderful devices had one thing in common – they were about as real as Bruce Forsyth's head of hair Now, suddenly and without hype, Memotech have announced that they have one of the beasts, a real live emulator, one that exists independent of a marketing director's imagination. The other amazing thing about it is that it works very well

For your money you get two essential ingredients. There is a compact little device that plugs into the side of the computer, containing a Rom, some Ram for storing the results of the keyboard reading routine, and some other bits. You also get a tape containing a program that allows you to run 20 Spectrum games (you have to buy the actual games yourself of course) These range from old chestnuts such as *Spectpede*, which you should be able to pick up for about a quid, right up to some of the more recent better releases such as *Atic Atac*, *Tornado Low Level* and *Starion*. Further tapes are planned at about £4 for the necessary bits to run ten more games Now that the system has been implemented, they expect to be able to keep up with the most recent Spectrum hits.



To run a game you simply make your choice from the menu, load the Spectrum tape in, to the accompaniment of a specially recreated familiar flashing blue and yellow border, and off you go Choices given in the game for Kempston joysticks, etc, should be avoided but all games work with the MTX cursors and joystick as well as the keyboard. No changes at all are made to the original program tape

To explain briefly how it works, the software does the easiest half of the emulation. First of all it compensates for the various weird loading systems so common these days. Secondly it ensures that any calls that the game makes to the Spectrum Rom go to a routine, placed at the same memory address, that for copyright reasons is totally different to Sinclair's code but produces the same result on the MTX hardware

The game code then carries on running as though it were on a Spectrum, controlling the internal logic, etc The menu program also sets up the best colours to use for each game from the MTX's wider range

The hardware pack reads the Memotech keyboard to see if the appropriate keys or joystick have been used and passes the information to the game by intercepting calls that would have gone to the Sinclair keys It also controls screen handling which is perhaps the most complicated bit The code that would be the Spectrum screen Ram is held in the memory, but has to be presented in a very different form to make sense to the MTX's video chip The Rom pack sends interrupts to stop the game running, reads the Spectrum screen, translates it into values that produce the same on the Memotech screen, and sends the new data to the video chip Fortunately pixel resolution is the same so the graphic details are reproduced exactly

The obvious drawback to this system is that it all takes time – it means that the game runs slightly slower, and that the rate of the screen updating falls to about a quarter of what it was originally, making movement less smooth. Tony Brewer who designed the package seemed almost apologetic for this as he explained it but the simple fact is, whilst the jerkiness is there if you look for it, most of the time you hardly notice it at all

Games which restrict all the action to a certain fraction of the screen, eg, *Starion* can be made to selectively refresh the moving parts at a faster rate and the relatively static parts more slowly to give a better overall effect. Any sound produced from Rom calls, ie, simple beeps, can be produced but those that rely on special effects caused by sending a signal to the sound chip many times a second are not worth reproducing because again the frequency falls dramatically Still, given the cleverness of it all, Tony Brewer has no reason to feel anything but proud

Because there is so much to fit in as well as the 48K Spectrum Ram the emulator will not run on the 48K MTX – only 64K and up Also certain games cannot be made to run – those which are made up of large amounts of Basic, those that make so many calls to the Rom that it is impractical to try to substitute all the routines, and certain games that seem to take exception to the interrupts

In my experience the MTX computers are regarded with a lot of respect from software house and serious users alike In particular they have the potential to be expanded into a very powerful system indeed with excellent networking, CP/M, 1 megabyte discs and more One of the major reasons it didn't succeed as a home computer was that, like Oric, it was caught in a vicious circle of no big sales because of limited software and, no rush to write software because of limited sales, etc This emulator, together with recent price cuts, could solve a lot of the problems at a single stroke

Tony Kendle

THE WORM IN PARADISE

What adventure lovers are waiting for!

Soon for AMSTRAD, ATARI, BBC, CBM, MSX, SPECTRUM etc.

C & F ASSOCIATES

SELECTED CHEAP BBC/SPECTRUM PROGRAMMES

SPECTRUM	RRP	Our Price	BBC	RRP	Our Price
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FAIRLIGHT	9.95	7.25	SWOOP	7.95	2.50
RED ARROWS	8.95	6.75	ENTHAR 7 (80 TRACK DISC)	15.95	14.95
DUN DARACH	9.95	7.25	BOFFIN	9.95	7.25
THE ARTIST	12.95	10.40	ATIC ATAC	7.95	5.95
GOLDEN APPLE	6.95	2.50	KILLER GORILLA	7.95	2.50
THAT'S THE SPIRIT	7.95	5.95	RED MOON	6.95	5.50
RED MOON	6.95	5.50	ALIEN-8	9.95	7.25
HERBERT'S DUMMY RUN	9.95	7.25	CONTRAPTION	9.95	8.75
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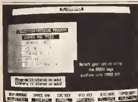
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Green finger

Program *Gardener* **Micro** QL **Price** £24 95 **Supplier** Sinclair Research, Stanhope Road, Camberley, Surrey

There is very little horticultural software for home computers, maybe it seems a subject that seems the antithesis of the high tech world of micros but nevertheless *Gardener* for the QL looks to be a very useful package

You can use *Gardener* in a variety of ways It can teach help select the right kind of plants for your garden, give advice on shrubs, trees and landscaping, and contains full details on methods of planting and care

It also has a database of 11,000 planets which can be accessed to discover an unknown plant from its chief characteristics You may add new plants to the database as well

That said, it isn't all that easy to use It takes a while to become familiar with its operation although all the options are accessed by a series of menues – read the well designed manual carefully before you start *Gardener* is an impressive program with plenty of practical applications for green fingured amateurs, but it would help if you'd had a little computing experience as well

Matthew Palmer



Hit list

Program *Now Games* **Price** £8 95 **Micro** Commodore 64 **Supplies** Virgin Games, 2 Vernons Yard, Portabello Road, London W2.

This is marvelloos value for money Virgin have released a compilation of six games from various software houses under one lable for a reasonable price All titles are old chart toppers Starting with Mike Singleton s classic *Lords of Midnight* (worth the price on its own) then *Strangeloop, Pyjamarama Brian Bloodaxe, Arabian Nights* and Falcon Patrol The first trio here will happily keep me up until the wee small hours and all on the same tape!

Included in the cassette are the instructions for each game, although in a somewhat precised form along with spaces for noting down Rev Counter numbers for each program

It would seem that Virgin have come up with a sound idea to stamp out schoolboy piracy by releasing popular games at a realistic price It works in the record industry and should do well here

The secret is finding the right games fo mix together, and with *Now Games* they've got it right.

Andy Moss



DOCTOR WHO ON T.V. THIS AUTUMN

YES, but only if you have a Commodore 64 Spectrum, BBC Micro or Amstrad home computer. Thanks to a unique licensing agreement with the British Broadcasting Corporation and about four man-years of programming time, "Doctor Who and the Mines of Terror" will be seen on thousands of TV screens in the next few months.

Micro Power, whose Castle Quest program on the BBC Micro broke new ground with a special combination of adventure game and arcade-style graphics, are now offering a game five or six times more complex in size of playing area, graphics detail and the variety and number of challenging puzzles.

A spokesman for the BBC said that they were already aware that Micro Power were capable of producing top quality computer games. "We were really impressed by the sheer size and complexity of this game and could see that it presented the player with a true DOCTOR WHO scenario.

Micro Power's MD Bob Simpson said, "We are over the moon about this opportunity to combine a really first class game with a TV series of such standing. The fanatical following for DOCTOR WHO in over 50 countries should ensure excellent sales in all markets where the Commodore 64 Spectrum, Amstrad and BBC Micro are available!

The Commodore 64 Amstrad and BBC Micro versions are to be released in October, with the Spectrum game following one month later. Other versions are being considered. Contact Bob Simpson or Eileen Garfield on (0532) 458800



PCW SHOW BREAKS ALL RECORDS

Although final statistics are not yet available, it is believed that more than 60 thousand visitors came to Olympia this year, with by far the greater proportion of interest in the so-called 'ailing' home computer side of the industry.

Micro Power's Software Manager Alan Butcher felt the show was a tremendous success, with enormous interest being shown in all four versions of Doctor Who and the Mines of Terror. Many visitors were attracted by the familiar Doctor Who theme which will feature as 'intro music' in the game.

"When can I buy it?" was the question most often asked. Micro Power's ardent BBC Micro supporters were at first a little disappointed that they would have to fork out as much as £18.95. However when it was explained that the program came in a 16K ROM plus a cassette, giving nearly 28K of code and data, as opposed to the usual maximum of nearly 12K, they were well satisfied.

The cassette versions for the Commodore, Spectrum and Amstrad are only £14.95. When you consider that in addition to a first class program you are provided with extra items such as decoder cards, factory blueprints, detailed briefing booklets, symbols card, secret clue envelope etc. you realise the DOCTOR gives tremendous value for money. Disk versions are also planned.



Left to Right.
Tony Suthcutt, Alan Butcher and Ian Clemmett

CAFE ROYAL LAUNCH

SIXTY representatives from the Press and Software Distributers attended the prestige Launch of Micro Power's DOCTOR WHO computer game at London's CAFE ROYAL in Regent Street. The first part of the proceedings was devoted to describing the game scenario the way the game was developed and the comprehensive marketing strategy being implemented. Of particular note was the £25 000 Advertising Campaign!

One unusual revelation was the degree of support being offered to distributors and dealers. Most major distributors are being offered Personalised Trade Mailers FOC. Thus each distributer will be able without much effort to mail out to each of his dealers all the relevant details of the product. The dealer is invited to send for posters and also a free demonstration cassette/disk to leave running in the shop. Due to the widespread popularity of Doctor WHO the game is expected to sell extremely well through the High Street Multiples.

Later on those attending were treated to a pre-view of the highly detailed and attractive graphics, spanning the whole of the enormous playing area. Particularly impressive was the Scrollerama system of 4-way horizontal and vertical scrolling.

The event was rounded off by a question and answer session and a superb buffet. A good time was had by all.



ROD COUSENS TO EXPORT DOCTOR WHO

Micro Power have entered into an agreement with Rod Cousens — ex Managing Director of Quicksilva — to mastermind the export sales drive of their new DOCTOR WHO computer game.

Bob Simpson, Micro Power's MD said, 'Having got to know Rod at GOSH Meetings and appreciated that no-one in the industry has more knowledge of overseas markets, I am delighted that he has agreed to act for us. With the Commodore 64 and Spectrum versions having the greatest potential, it was obvious that we did not have the time or experience to handle this aspect of the marketing ourselves.

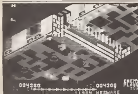
Rod Cousens commenting on the deal said 'I am pleased to be involved with Micro Power in promoting such a prestigious product. The Doctor Who program should sell very well both at home and abroad. This highly complex arcade-style adventure is an excellent tribute to the popular TV character, whilst being a great challenge to the most ardent adventure fan. The extensive program documentation has been translated into German French and Spanish. Overseas Buyers contact Rod on 0703 225282.

NEW MOVES ON ANTI-PIRACY

Micro Power have taken the unusual step of keeping the completed version of their DOCTOR WHO program under wraps until the release date in October.

A spokesman said "We have put together a slightly cut-down version of this highly complex adventure containing a substantial part of the map, puzzles etc. This will give reviewers and trade buyers a chance to assess it properly without any risk to Micro Power that a copy could accidentally fall into the wrong hands. We are also very keen that few of the puzzles are solved before release date"

The fact that the program pack contains several printed items necessary to the player in the course of the game, has the added advantage of making piracy very expensive. Micro Power believe that the provision of a number of goodies with Acornsoft's ELITE program helped to reduce copying by the 'gifted amateur' brigade! The video-type case itself is of a unique design to further deter commercial piracy.



More zax

Program *Super Zaxxon* **Micro** Commodore 64 **Price** £9.95 **Supplier** US Gold Unit 10, The Parkway Industrial Centre, Heneage Street, Birmingham B7 4LY

That old arcade 'Zap 'em, shoot 'em up' *Zaxxon* has resurfaced again having been enhanced, spruced up and repackaged by US Gold and sent out as a sequel. They bill it as "the ultimate challenge" and a good version it is too. For those of you not familiar with our old friend, you are set the task of flying your spacecraft through a complex alien fortress, dodging all the firepower it throws at you, allowing you to commit as much wanton destruction as you possibly can.

In this version we come across some new threats, namely the super Zaxxon dragons and a long tunnel which connects one fortress to another and contains various n'er do wells such as mine-layers and enemy planes.

The dragons are encountered after a successful run through two fortresses, and pretty fearsome creatures they are to, what with their acid like breath and long talons. Fortunately, they can be destroyed and that is the aim of the game, but only six direct shots in their mouths will kill them. There are three to be despatched before continuing on to the higher level.

All the usual U.S. Gold slickness is here, and the instruction leaflet is quite comprehensive. I am not sure if this will be a big seller as its subject is quite passé but if you like a good shoot up game and don't have the original, it's a good buy. Recommended.

Andy Moss



Chuff chuff

Program *Southern Belle* **Micro** CPC range **Price** £7.95 **Supplier** Hewson Consultants 56B Milton Trading Estate Milton, Abingdon, Oxon.

It's welcome news that Hewson have converted their marvellous *Southern Belle* for the Amstrad. For those that don't know, it's a simulation of a steam train making the run between London and Brighton.

You are given a choice between watching a demo of the run, controlling almost nothing except the brakes and the speed, right up to where you have to blow the whistle, stoke the engine, control the fire and the air, guided by the type of smoke produced, etc.

Graphics are simple but effective – driver's view of the cabin shows the instrumentation, and all the stations and major landmarks pass you as wire frame graphics. You can also see maps of the train's position on the run and of course the timetable. If there is a weak point it is that in easy stages there are too many boring bits between the landmarks, but when you play the game in earnest you are grateful for the respite they offer.

I found it furiously addictive as well as being original.

Tony Kendle



Hoods

Program *Robin of Sherwood – The Touchstones of Rhiannon* **Micro** Spectrum 48K **Price** £9.95 **Supplier** Adventure International (U.K.), 85 New Summer Street, Birmingham B19 3TE

How many Robin Hoods can you remember? Errol Flynn, all buckel swash and roguish grin, Richard (Lincoln?) Greene on TV with that ever parodied fanfare and bow twang; more recently, moody Michael Praed and the addition of a goodly dollop of mystical hokum.

It's the latter who's immortalised in Adventure International's latest tie-in, ready for his latest rendezvous with Herne the Hunter, who I always thought haunted Windsor but could, I suppose, be on his hols in Nottingham.

First though the knotty problem of how to escape the dungeon – just one of the daily hazards of outlaw life. Those with a logical mind and/or memory of *The Hobbit* shouldn't have too much trouble. Then it's up and away with a hey nonny no and a hey, lads, hey!

As with Adventure International's previous offering, *Gremlins*, there are graphics aplenty and far from being a waste of memory these are moody and imaginative, even containing some animation. It's a rather linear sort of game and there are ample opportunities for masochists to enjoy sudden death (memo to Adventure International. What about *Save to Buffer* next time – please?)

My only other quibbles are that the three screen sections can become a trifle untidy and the price is somewhat steep. I guess Robin's given up robbing the rich and started to live on his royalties.

John Minson



Oh rocks!

Program *Meteor Storm* **Micro** QL **Price** £12.95 **Supplier** Sinclair Research, Stanhope Road, Camberley, Surrey GU15 3PS.L.

Meteor Storm is a version of *Asteroids*, most ancient of games, and here it is on the QL in 1985. For those suffering from amnesia, you have a triangular shaped spaceship and must blast away at a screenful of large floating asteroids.

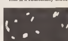
Each time you hit a large asteroid it fragments into four pieces and each of those pieces fragments into a further four.

The idea, obviously, is to clear the screen without being totalled by an asteroid or asteroid fragment.

More fun comes in the form of alien spaceships that zip across the sky lobbing space mines at you. So it goes: more screens, more asteroids.

Controls are standard (rotate l/r, forward, fire, and hyperspace – instant removal to another part of the screen if things get tough) and the QL plays jolly one channel tunes like Bach's *Toccata* (the one finger version) and the theme from *Thunderbirds* which at least don't make the rest of the action halt like the Spectrum.

This is a reasonably attractive version of *Asteroids*, priced about averagely for the QL.



But it's as far from being original as it's possible to be and technically exciting certainly it isn't!

Matthew Palmer



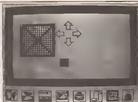
On screen

Program *Screenplay* **Price** £8 95 **Micro** Spectrum **Supplier** Macmillan Software, 4 Little Essex St, London WC2R 3LF

It's always refreshing to be able to review something different from the norm, and this package from Macmillan is certainly that.

It is a bold attempt to put you in charge of creating your very own movie production, from writing the script and soundtrack, through to anonating the characters and designing the scenery

There is obviously a limit to what the Spectrum is capable of processing, and as the whole system is loaded at once, your 'movie' is only six screens long and the actual animation is rather crude, but as a whole the package works quite well



Initially, you are presented with a main menu which consists of seven icons, two which save and load your production and the others five for accessing the script, soundtrack, action, scenery and editing sections Once a section is selected, you can, by the use of more icons, begin your designing

It's all very well explained in the booklet accompanying the program, along with a nice introduction into the world of film and television.

A sample movie is supplied on side B of the tape. in your mini movie the story can be related by either scrolling the text along the bottom of the scene, or by using storyboards like they did in the old silent days.

A nice touch is the facility to change the typeface to italics The only drawback is that it is all limited. but Macmillans say that to get around this problem just video your first six screens, (they explain how) and then add more as you go gradually building a full length computer film on video The only obvious drawback is if you don't have a video recorder you've only got a six screen movie!

This niggle aside, *Screenplay* is a very professional package appealing more to the younger element Three cheers to Macmillan for providing something new and original

Andy Moss

New world

Program *Starquake* **Micro** Spectrum **Price** £7 95 **Supplier** Bubble Bus Software, 87 High St, Tonbridge, Kent

Do you remember when Ocean bought Imagine's Trading Style and everyone sat around trying to figure the full awful implications of the move Well, it's a good job you can't copyright Graphics Style as well or Bubble Bus might owe Ultimate a lot of money

Bubble Bus's biggest Spectrum hit to date was of course *Wizard's Lair* – it was completely derivative of Ultimate's *Atic Atac/Sabre Wulf* games but with more plot and gameplay injected to justify itself Now the follow up to this from the same author has done exactly the same with *Underwurlde*, and the result is brilliant

The graphics, the cute sprites, the falling down caverns all scream Ultimate, but with a space theme rather than a mystical one and if anything the sprites are cuter The best news, however, is that there is a lot more to do in this than in *Underwurlde* – not only do you have to find some bits to assemble (a planet's core in this case) but also learn how to use the teleports, the space hoppers, the anti-grav lifts, the pyramid and many other strange objects. Where you get the passwords, what do you do with the flexible whatsits, what is a smash trap – hours of fun guaranteed

The other bit of good news is that owners of machines such as the Commodore or Amstrad who wish they had Ultimate's back catalogue can stop worrying – Bubble Bus seem to have no qualms about getting out conversions, and good ones too, as soon as possible

Tony Kendle

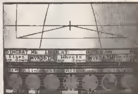
Up in the air

Program *Flight Simulator* **Micro** CPC range **Price** £12 95 **Supplier** Myrddin Software, PO Box 81, Swindon, Wilts

Myrddin's *Flight Simulator* has been around for quite a while on the Amstrad. The disc version, unfortunately, takes no advantage of the opportunity for increasing the scope of the game.

Despite a few other releases from companies such as Anirog with their 737 program, the only other flight simulator worthy of the name on the Amstrad to date is Digital integration's superb *Fighter Pilot* Myrddin's effort seems diametrically opposite to this in every way, but not without merit despite this

Flight Simulator is slow, moves in small jumps of the wireframe landscape, has a disappointingly simple screen display and very little guidance in the packaging about what to do, what to expect, etc However, it has the advantage of 3D landmarks, a playing area so wide it would take ages to see it all and a choice of runways that actually look different Once involved in the thing minor quibbles with the style of programming are soon forgotten and it can be absorbing



I still think there is room for a definitive Amstrad flight program – along the lines of Acornsoft's *Aviator* perhaps, which combines the best of both worlds In the meantime this is a reasonable buy.

Tony Kendle

Star Game

Crossgram

On with the thinking caps for this puzzle written for the Commodore 64 by J P Francis

Crossgram is a hybrid between a crossword and an anagram, born out of idle hours between larger projects The game has five separate puzzles – your task is to solve the anagrams, then find out exactly where they fit in the crossword.

The program contains full instructions and is quite user friendly. The words have been simply encoded (Lines 100-145 should be entered as graphics symbols) so that you can type in the program without knowing what the words are It is easy to break into the program and discover the words . but that would be cheating!

The quickest time that anyone (excluding myself) has completed a puzzle is 47 minutes. Can anyone beat that?

NB Lines 100 to 145 must be entered as the graphics symbols shown – however, throughout the rest of the listing graphics characters and cursor instructions have been printed out in full to make your typing task easier These should not be entered as shown, but replaced by the appropriate control character

ACCROSS

1. ALLOW
5 MARK
8. FRUIT
9. ROW
10 FISH
11. FRENCH EGG
12 TIMEPIECE
13 ENERGY
16 SOUTH AMERICAN COUNTRY
18. RIM
20 CONFLICT
22. SOAP BUBBLE
23 FEMALE DEER
24 RENOWN
25. RIND
28 GOD LIKE
30 INDICATE
33. RUSH
34 HELP
35 THEATRE ATTENDANT
36 WHEEL COVERING
37 JOINED

DOWN

1. DEVELOP
2. AIRMAIL LETTER
3 JAIL (4,2)
4 CHEERED
5 OBSTRUCTED
6 WELSH VEGETABLE
7 SPRIG
8 CURVE
14 REPLIED
15 MATURE
17 REGRET
19 PRIME
20 PALE
21 GUILT
26. ALGAE
27 LOOKED AFTER
29. LEAVE OUT
30 TIP
31 BITUMEN

```
10 GOSUB200
20 FORM=1TO10 READW$(M) L=LEN(W$(M))
25 FORD=1TOL P=P+1 A$=MID$(W$(M),D,1) IF
A$=" "THEN40
27 IFA$="{PI}"THENA=80 GOTO35
30 A=ASC(A$)-135
33 T$(P)=CHR$(A) NEXTD
40 IFM>5THEN70
45 A$(Y)=T$(1)+T$(2)+T$(3)+T$(4)+T$(5)+T
$(6)+T$(7)+T$(8) A$(Y)=LEFT$(A$(Y),P-1)
50 P=0 Y=Y+1 NEXTD
60 NEXTM
70 IFY=26THENY=1
80 B$(Y)=T$(1)+T$(2)+T$(3)+T$(4)+T$(5)+T
$(6)+T$(7)+T$(8) B$(Y)=LEFT$(B$(Y),P-1)
85 P=0 Y=Y+1 NEXTD
90 NEXTM
95 GOSUB 250
100 DATA" %d o( +L |, ))<,x+,#LL ,+, )#o+,Lo+x,,"
105 DATA"# |\L |HL,oX7,+, \(,+%,+? /,_ +oX7#,"
110 DATA"/,# |+7 /,_ |X/|LL,^ |#| ,+7|L |X\L/,"
115 DATA"!X ++x,+, ||7#7,/ |# |++,o |#+,7,/,_,"
120 DATA"+# |/L|,L ,+L|$ ,^ |#| ,+7/,_/ L|/,"
125 DATA"x_||,+L,+7L L |L|7#7K/,\ |7#L, \#|/ "
130 DATA" |#o+, |+#L/,L|L ,+| |#,7 |/,_+,\7+,"
133 DATA"L,/|x,7|L \ |o,L ,+|X|\L/,/| ,/,_|,|)#L,"
140 DATA"xo |#,x#7L |#,o|#L+7|L,7,||#7, \|o+,"
145 DATA"+|L+,/x|# |#, L|||oL/,+|, /,_ , |7#L,"
150 PRINT"{CLR}{DOWN}{DOWN}{WHT}" POKE53
281,12:PRINTTAB(20)"{C=A}{C*}{C=R}{C*}
{C=R}{C*}{C=R}{C*}{C=R}{C*}{C=R}
{C*}{C=R}{C*}{C=R}{C*}{C=S}"
155 FORT=1TO8 PRINTTAB(20)"{C-} -{C-} -
{C-} -{C-} -{C-} -{C-} -{C-} -{C-}
-{C-} -"
160 PRINTTAB(20)"{C=Q}{C*}{C+}{C*}{C+}
{C*}{C+}{C*}{C+}{C*}{C+}{C*}
{C+}{C*}{C+}{C*}{C+}{C=W}" N
EXT
165 PRINTTAB(20)"{UP}{C=Z}{C*}{C=E}{C*}
{C=E}{C*}{C=E}{C*}{C=E}{C*}{C=E}
{C*}{C=E}{C*}{C=E}{C*}{C=X}"
170 PRINTTAB(21)"{UP}{UP}{UP}{UP}{UP}{UP}
{UP}{UP}{UP}{UP}{UP}{UP}{UP}{UP}{BLK}{R
VS} {OFF}{WHT}{C-} -{C-} -{BLK}{RVS} {W
HT}{OFF}{C-} -{BLK}{RVS} {WHT}{OFF}{C-} -
{BLK}{RVS} {WHT}{OFF}{C-} -{C-} -{BLK}
{RVS} {OFF}{DOWN}"
175 PRINTTAB(21)"{BLK}{RVS} {WHT}{OFF}{C-
} -{C-} -{C-} -{C-} -{C-} -{C-} -{
BLK}{RVS} {OFF}{DOWN}"
180 PRINTTAB(21)"{BLK}{RVS} {WHT}{OFF}{C-
} -{C-} -{BLK}{RVS} {WHT}{OFF}{C-} -{C-
} -{BLK}{RVS} {WHT}{OFF}{C-} -{C-} -{
BLK}{RVS} {OFF}{DOWN}"
185 PRINTTAB(23)"{BLK}{RVS} {OFF}{DOWN}"
190 PRINTTAB(23)"{RVS} {WHT}{OFF}{C-} -{
BLK}{RVS} {WHT}{OFF}{C-} -{C-} -{BLK}{R
VS} {WHT}{OFF}{C-} -{C-} -{BLK}{RVS} {O
FF}{DOWN}"
195 PRINTTAB(29)"{RVS} {WHT}{OFF}{C-} -{
BLK}{RVS} {WHT}{OFF}{C-} -{BLK}{RVS} {OF
F}{DOWN}"
198 PRINTTAB(23)"{RVS} {WHT}{OFF}{C-} -{
BLK}{RVS} {OFF}{DOWN}" GOTO300
200 POKE53280,0 POKE53281,0 PRINT"{CLR}{
YEL}                CROSSGRAM"
205 PRINT"{PUR}                {C=Y}{C=Y}
{C=Y}{C=Y}{C=Y}{C=Y}{C=Y}{C=Y}{C=Y} {YEL
}{DOWN}BY J.P.FRANCIS"
210 DIMW$(10),A$(25),B$(25) Y=1
215 PRINT"{DOWN}{DOWN}{CYN} FIT THE GIVE
N WORDS CORRECTLY INTO THE"
216 PRINT" GRID. WORK OUT  AN  ANAGRAM
AND  THEN"
217 PRINT" DECIDE  WHERE YOU THINK IT FI
TS. {PUR}3.{CYN} TO"
218 PRINT" ENTER IT  INTO THE GRID PRESS
 {RVS}{RED}E{OFF}{CYN}-ENTER"
219 PRINT" {PUR}2.{CYN} PRESS {RVS}{RED}
A{OFF}{CYN}-ACROSS  OR {RED}{RVS}D{CYN}{
OFF}-DOWN ACCORDING"
220 PRINT" TO WHERE  YOU WANT TO  PLACE
THE WORD."
222 PRINT" {PUR}1.{CYN} TO SELECT POSITI
ON PRESS (1-5) THIS"
223 PRINT" IS WORKED OUT  FROM THE TOP
LEFT EDGE"
224 PRINT" OF THE GRID,FOR EXAMPLE THE 9
TH SQUARE"
225 PRINT" IS  2 ACROSS  THE 2ND  1 DOWN
 THE 11TH"
226 PRINT" IS  2 DOWN  ETC. DON'T  WORRY
 YOU WILL"
227 PRINT" SOON GET THE HANG OF IT."
228 PRINT"   ENTER THE ABOVE COMMANDS IN
 ORDER IE"
231 PRINT" {DOWN}1,2,3{CYN}. {RVS}{RED}{↑}{
OFF}{CYN} ABORTS THE GAME. YOU CAN THEN"
232 PRINT" CHOOSE  ANOTHER ONE.  PRESS {
RVS}{RED}{↑}{OFF}{CYN} TO TRY A"
233 PRINT" PUZZLE OUT, IF WRONG CARRY  O
N TRYING{DOWN}{DOWN}{DOWN}"
235 RETURN
250 INPUT"{UP} PLEASE ENTER PUZZLE NO. (
0-4)" PU
255 IF PU>5THEN250
260 RETURN
300 B=PU*5 FORT=1TO5 L=LEN(A$(B+T))
302 FORO=1TO8 R(O)=0 NEXT
305 FORK=1TOL
310 R=INT(L*RND(1)+1)
320 FORP=1TOL IFR=R(P)THEN310
322 NEXTP
325 R(K)=R  NEXTK
330 FORK=1TOL T$(K)=MID$(A$(B+T),R(K),1)
 NEXT
340 A$(T)=T$(1)+T$(2)+T$(3)+T$(4)+T$(5)+
T$(6)+T$(7)+T$(8) A$(T)=LEFT$(A$(T),L)
345 NEXTT
350 FORT=1TO5 L=LEN(B$(B+T))
352 FORO=1TO8 R(O)=0 NEXT
355 FORK=1TOL
360 R=INT(L*RND(1)+1)
370 FORP=1TOL IFR=R(P)THEN360
372 NEXTP
375 R(K)=R  NEXTK
380 FORK=1TOL T$(K)=MID$(B$(B+T),R(K),1)
 NEXT
385 G$(T)=T$(1)+T$(2)+T$(3)+T$(4)+T$(5)+
T$(6)+T$(7)+T$(8) G$(T)=LEFT$(B$(T),L)
390 NEXTT
400 PRINT"{HOME}{DOWN}{DOWN}{DOWN} {RVS}
{RED}A{OFF}{BLU}CROSS{DOWN}{DOWN}" PRINT
" {BLU}{DOWN}{DOWN}{DOWN}{CYN}  PO=0
405 FORP=1TO5 R(P)=0 NEXT
407 FORU=1TO5
410 R=INT(5*RND(1)+1)
415 FORP=1TO5 IFR=R(P)THEN410
420 NEXTP
425 R(U)=R NEXTU
430 E=E+1 IFE=2THEN470
440 FORT=1TO5 PRINT"    ",A$(R(T)) NEXT
450 GOTO485
470 FORT=1TO5 PRINT"    ";G$(R(T)) NEXT
480 W(1)=8 W(2)=5 W(3)=6 W(4)=4 W(5)=5 W
(6)=4 W(7)=6 W(8)=8 W(9)=6 W(10)=4 I=1
485 PRINT"{DOWN}{DOWN}"
490 PRINT"    {RVS}{RED}E{BLU}INTER{OFF}
 {RVS}{RED}{↑}{OFF} {RVS}{BLU}ABORT{OFF}
 {RVS}{RED}T{OFF}{BLU} {RVS}TRY SOLUTION
{OFF}{UP}{UP}{UP}"
493 PRINT"    {BLU}POSITION ",I
500 GETA$ IFA$=""THEN500
505 IFA$="A"THENPRINT"{HOME}{DOWN}{DOWN}
{DOWN} {RED}{RVS}A{OFF}{BLU}CROSS{DOWN}{
DOWN}" PRINT" {BLU}{DOWN}{DOWN}{DOWN}{DOWN
}{DOWN}{DOWN}{DOWN}{DOWN}{DOWN}{DOWN}{DO
WN}{DOWN}{DOWN}{DOWN}{DOWN}  PO=0
510 IFA$="D"THENPRINT"{HOME}{DOWN}{DOWN}
{DOWN} {BLU}ACROSS{DOWN}{DOWN}" PRINT" {
RED}{RVS}D{OFF}{BLU}OWN{DOWN}{DOWN}{DOWN
}{DOWN}{DOWN}{DOWN}{DOWN}{DOWN}{DOWN}{DO
WN}{DOWN}{DOWN}{DOWN}{DOWN}" PO=5
515 IFA$="E"THEN600
520 IFA$="↑"THEN700
521 IFA$="T"THEN710
525 K=ASC(A$) IFK>48ANDK<54THENI=K-48 PR
INT"{UP}{UP}" GOTO493
530 GOTO500
600 PRINT"{DOWN}{DOWN}"
602 IF PO=0THENIN=2 GOTO620
605 IN=80
607 IF I=1 THEN L=1127
610 IF I=2 THEN L=1135
612 IF I=3 THEN L=1129
614 IF I=4 THEN L=1291
616 IF I=5 THEN L=1445
618 GOTO630
620 IF I=1 THEN L=1203
622 IF I=2 THEN L=1365
624 IF I=3 THEN L=1527
626 IF I=4 THEN L=1683
628 IF I=5 THEN L=1769
630 INPUT"{UP}    WORD",L$
635 IF LEN(L$)<>W(PO+I)THENPRINT"{UP}
                                  " GOTO630
640 FORT=1TOLEN(L$) A5=ASC(MID$(L$,T,1))
-64
650 L=L+IN POKEL,A5 NEXT
655 PRINT"{UP}
        {UP}{UP}{UP}" K$(PO+I)=L$ GOTO50
0
700 E=0 PRINT"{CLR}  GOSUB250 GOTO130
710 ER=0 FORT=1TO5 IFK$(T)<>A$(B+T)THENE
R=1
715 NEXT
720 FORT=1TO5 IFK$(T+5)<>B$(T+B)THENER=1
725 NEXT
730 IFER=1THENPRINT"{HOME}     {RVS}NOPE{
OFF}" FORT=1TO250 NEXT
735 IFER=1THENPRINT"{HOME}           "
 A$="A" GOTO505
740 PRINT"{HOME} CONGRATULATIONS, PRESS
ANY KEY TO PLAY" PRINT" ANOTHER GAME."
750 GETA$ IFA$<>""THEN700
755 GOTO750
800 REM ****FINISHING TOUCHES****
```

Memories are made of bits

A memory dump to printer for BBC B and Electron, written by John Beckett

When programming in machine code it is often necessary to display the contents of memory to find the information necessary to the programmer. It is common practice in this case, to use a dump program. On much larger machines, it is often the case that files may have to be 'dumped'. The same principle applies to 32-bit machines costing thousands of pounds to the small 8-bit Electron this article was written on.

The following program will give the user a hard copy of a section of memory in dump format. The program is suitable for a printer which has Epson compatible control codes. If you are using a printer which does not have the same control codes, then I have provided a list of the ones used in this program. With this, conversion should be easy.

Vdu 1, 27, 1, 64 – resets printer, VDU 1, 27, 1, 64, 1, 9 – sets line spacing to 9/72", VDU 1, 15 – Turns on condensed print.

The program presented here will allow you to dump any area of memory directly on the printer. When you run this program, you must first enter how many columns (locations), the dump should be printed.

Most programs which dump memory to the screen use a fixed eight columns. Using this program, up to 32 columns can be used, so you need not waste half your printer paper.

Included in the output is a handy offset table at the top. This is included because the more locations you print, the easier it is to lose track of the individual addresses. Secondly, you should enter the start address, this should be in the range &0000 – &FFFF.

This program will stop after 16 lines have been printed. For the next 16, press the space bar. Anything else will end the program.

Program Notes

DEF PROCassemble	Assembles machine code.
DEF PROCintro	Provides introduction to program
DEF PROCd(I$,x y)	Prints a string of text at x and y in double height
prh	Subroutines to print values in A reg as hex numbers.
.sp	Subroutine to print a space
pr	Subroutine to print a string of text.
prd	Subroutine to print address
.head	Prints header to output.
line	Routine used by above, to print lines
.hex	Start of machine code
.ldg	Routine to input hex address.
.ldb	Routine using above, to convert hex string to a two byte address.
gadd	Routine which displays prompt, and calls the above two routines

```
10REM    Printer Memory Dump
20 REM John Beckett 1985
30
40ON ERROR GOTO 890
50MODE4
60VDU23,1,0;0;0;0;
70PROCassemble
80PROCintro
90END
100
110DEF PROCassemble
120FOR p=0 TO 2 STEP 2
130P%=&4000:[OPT p
140.hex JSR gadd
150LDA#2:JSR&FFEE:JSR head
160.sp LDX#16
170.nn JSR&FFE7
180JSR prd
190JSR sp:LDY#0
200.ob LDA(&80),Y
210JSR prh:JSR sp
220INY:CPY&72:BNE ob
230JSR sp:LDY#0
240.o4 LDA(&80),Y
250CMP#&20:BCC ma
260CMP#&7F:BCC wrl
270.ma LDA#46:.wrl JSR&FFEE
280INY:CPY &72:BNE o4:CLC
290LDA&80:ADC&72:STA&80
300LDA&81:ADC#0:STA&81
310DEX:BNE nn
320JSR&FFE7:JSR&FFE0
330CMP#32:BEQ sp
340LDA#3:JMP&FFEE
350
360.line LDA#45:LDX&73:.ne JSR&FFEE
370DEX:BNE ne:RTS
380
390.prd LDA&81:JSR prh:LDA&80:JMP prh
400
410.gadd JSR&FFE7
420LDX#ak MOD256:LDY#ak DIV256:JSR pr
430LDA#4:JSR ldf:LDY#0
440JSR ldb:STA&81:JSR ldb:STA&80:RTS
450
460.ldf STA len
470LDX#inp MOD256:LDY#inp DIV256
480LDA#0:JSR&FFF1:STY inp+11:RTS
490
500.ldb JSR cv
510ASL A:ASL A:ASL A:ASL A
520AND#&F0:STA inp+10:INY
530JSR cv:CLC
540ADC inp+10:INY:RTS
550.cv LDA st,Y:CMP#&3A:BCS ltr
560AND#&0F:RTS
570.ltr AND#&0F:CLC:ADC#&9:RTS
580
590.prh PHA
600LSR A:LSR A:LSR A:LSR A
610JSR prt:PLA
620.prt AND#&0F:CMP#&A:BCC na
630ADC#6:.na ADC#&30:JMP&FFE3
640
650.sp LDA#&20:JMP&FFE3
660
670.pr STX&70:STY&71:LDY#0
680.gt LDA(&70),Y:CMP#13:BEQ ans
690JSR&FFEE:INY:JMP gt:.ans RTS
700
710.head
720LDX#al MOD256:LDY#al DIV256:JSR pr
730JSR prd:JSR&FFE7:JSR line:JSR&FFE7
740LDX#8:.mm JSR sp:DEX:BNE mm
750LDX#0:.kk TXA:JSR prh:JSR sp:INX
760CPX&72:BNE kk:JSR&FFE7:JSR line
770JMP&FFE7
780
790.al EQUS"Memory Dump from &":EQUB13
800.ak  EQUS"Start address &":EQUB13
810.inp EQUB st MOD256
820     EQUB st DIV256
830.len EQUB 4
840     EQUB 32:EQUB 127
850.st  EQUS STRING$(15,CHR$32)
860]:NEXT
870ENDPROC
880
890REPORT:PRINT" at line ";ERL
900OSCLI("KEY0 LIST"+STR$ERL+"|M")
910*FX138,0,128
920END
930
940DEF PROCintro
950PROCd("Printer Memory Dump",9,0)
960PRINT TAB(7,4)"By John T W Beckett
1985"
970PRINT TAB(0,6)STRING$(40,"-")
980VDU28,0,31,39,6
990INPUT "Enter number of columns ",C
1000IF C<0 OR C>32 VDU7:GOTO990
1010?&72=C:nq=(C*3)+4:?&73=nq
1020VDU2,1,27,1,64
1030VDU1,15
1040VDU1,27,1,65,1,9
1050VDU3
1060CALL hex
1070ENDPROC
1080
1090DEF PROCd(I$,x,y)
1100F=&90:AX=&A:X%=0:Y%=&9
1110FOR h=1 TO LEN(I$)
1120?F=ASC(MID$(I$,h,1)):CALL&FFF1
1130VDU23,224,F?1,F?1,F?2,F?2,F?3,F?3,F?
4,F?4
1140VDU23,225,F?5,F?5,F?6,F?6,F?7,F?7,F?
8,F?8
1150PRINT TAB(x+h,y);CHR$224;TAB(x+h,y+
1);CHR$225
1160NEXT
1170ENDPROC
```

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```
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Animated routines

The one you've been waiting for – a sprite designer for ZX!Basic written by ***Stuart Nichols***

ZX!Basic has built into it a set of routines to control the movement of up to 16 on screen sprites. Each sprite has a set of attributes which tell the computer how and when to move it. The direction of sprites 1 to 15 is controlled by the computer, however, sprite 16 is controlled from the keyboard using the cursor keys.

Sprite 16 also has a hit detection routine that returns the number of any sprite colliding with it. Because the routine is interrupt driven, the Basic interpreter may miss noticing a hit when sprites are travelling at 'fast' speeds. *Peek 61100* will return a value 0 to 15 (0 = no hit).

The sprite routines are switched on by the *!A1* instruction. This also copies the current screen to a screen dump area of *ZX!Basic* memory to be used when erasing sprites. Because of this it is not possible to add or remove objects from the screen unless the sprite routine is switched off using *!A0* (and then back on again *!A1*) thus copying the updated screen. However, it is possible to alter the attributes whilst animation is On, thus changing barriers or boundaries, etc.

To set up or alter a sprite 'attribute' use instructions *!A, !F, !G, !H, !J, !K* as described in the main instructions published in Vol 4 Nos 31-34. Note that sprite attributes can be changed whilst the animation is On.

If possible switch off the animation routines (*!A0*) before returning to ZX!Basic as the sprites will continue to move through your listing. *!A0* can be used as a direct command.

ZX!Basic comes with 16 figures set up in memory to be used straight away. If you require your own sprite figures then use the ZX!Sprites Designer program (listed this week) to alter those existing or to completely redesign your own set.

Because of the method of animation used in ZX!Basic each sprite occupies its own screen layer, thus one sprite will overprint another. However, because a special masking technique is used, parts of an overprinted sprite can show through if required. ZX!Sprites Designer requires not only the sprite design to be created (up to 2 × 2 character squares) but also the mask area of the sprite. It is generally advisable to leave a one pixel border around your sprite so that it will show up on a solid block of colour.

Select option two of ZX!Sprites Designer, then figure two to give you an idea of the design requirements. You can *Save* your new sprites to tape for use in other programs.

The following Basic program is written for use only with ZX!Basic and makes use of many of the extra commands. The program uses the following shorthand for graphics characters to avoid confusion in the listing.

1. All graphics characters are placed in brackets [ ]
2. Graphics are indicated by a lower case g followed by the graphics letter in upper case, eg, [gA] is graphics A
3. If more than one graphics characters are to be printed this will be indicated by [gABCD] etc
4. If for example 16 graphics letter As are required this will be shown as [16gA]
5. Graphics Shift characters are indicated by [gs5] etc
6. Where several spaces are required this is indicated by [64 spaces] etc
7. Line 8005 [copyright]is E-Mode/P

This program makes use of the normal Spectrum UDGs. These should be set up using the Hexdump Code *65368,168*. Use the Hexloder in Vol 4 No 32.

Once the program has been typed in and the UDGs entered then *Save* it using *Goto 5000*. To check that the program is correct *Load* ZX!Basic into memory first, then *Load* AX!Sprites which should auto run. Work through the menu option to ensure that all is OK. Note that the first instruction is *!Z1* which disables *Break*. To re-enter ZX!Basic select option six.

Remember, ZX!Sprites Designer will only run if you have loaded ZX!Basic first, published in Vol 4 Nos 31-34. Copies of both programs can still be obtained from Stuart Nichols. Send £3 to him, c/o 82 Lays Drive, Keynsham, Bristol BS18 2LE

```
[illegible]
```

[illegible]

ZX Spectrum 48K HEXDUMP

[illegible]

Under pressure

Improve your typing with this program for the QL by **E Penman**

This program, though not actually teaching touch typing, provides a very useful tool for learning the QL keyboard and will allow you with practice to increase your typing accuracy and speed.

On running the screen is divided into two windows. The top window contains the program name and a list of the letters you have selected. In the bottom window is a list of the five options F1-F5 (which may be selected at any time) and five parameters which the QL records while you type. The bottom window is also used to display the letters you must type (eg. "*Press K*")

F1 – Enter Characters
This option allows you to enter the letters you want to be tested on. Up to 144 different characters are allowed provided they are between *Chr$(32)* and *Chr$(191)*. Alphabetical, foreign, numeral, as well as miscellaneous characters are allowed. By entering a particular letter more than once you increase the chance of it being selected which is useful for letters you do not know. The letters that you select are shown in the top window. When you first run the program a default list of the alphabet is used.

F2 – Normal Mode
This option displays a letter on the screen which you have to press on the keyboard. If you are correct another letter is selected, ad infinitum. By doing this many times you will eventually automatically associate a particular letter with its corresponding key.

F3 – Speed Test
This has the same format as *F2* but lasts 60 seconds during which a record is shown of your typing accuracy and speed.

F4 – Game
Here an ever increasing line of letters advances from right to left across the screen towards your "base" on the left. You must shoot each letter in turn by pressing the appropriate key. As you play the speed gradually increases and a score is shown at the bottom.

F5 – Sound
This will turn on and off (almost!) the sound.

Program Notes
No *Rem* statements are considered necessary as the program is fully structured. Each section has an appropriately named procedure so it should be quite easy to understand!

Hints
Change Lines 230-240 and 310 to alter the default list of letters.

Change the "60" in Line 1230 and 1240 to alter the length of the speed test.

Change the four in Line 1420 to change the number of "aliens" which start in the game.

Change the "10" and the "1" in Line 1880 to alter the maximum speed and rate at which the game increases in speed respectively.

```
100 init
110 setup
120 DEFine PROCedure init
130 OPEN#1,con_460x180a26x72
140 OPEN#3,con_460x60a26x4
150 OPEN#4,con_512x256a0x0
160 MODE 4
170 PAPER#4,2:BORDER#4,1,7:CLS#4
180 BORDER 1,7:CLS
190 BORDER#3,1,7:CLS#3
200 snd=1000:sndg=1:DIM lett(144)
210 END DEFine init
220 DEFine PROCedure setup
230 FOR a=0 TO 25
240 lett(a)=97+a
250 NEXT a
260 scr1
270 scr3
280 BEEP snd,30
290 INK 2:INK#3,7
300 p 3,12,"PRESS F1-F5"
310 CURSOR#3,40,30:PRINT#3,"abcdefghijkl
mnopqrstuvwxyz"
320 REPeat loop
330 check_keys
340 END REPeat loop
350 END DEFine setup
360 DEFine PROCedure scr1
370 INK 4:CSIZE 2,0:CLS
380 p 8,1,"F1 ENTER CHARS"
390 p 10,1,"F2 NORMAL MODE"
400 p 12,1,"F3 SPEED TEST"
410 p 14,1,"F4 GAME"
420 p 16,1,"F5 SOUND"
430 p 8,27,"WORDS/MIN"
440 p 10,27,"% CORRECT"
450 p 12,27,"SECS LEFT"
460 p 14,27,"SCORE"
470 p 16,27,"LEVEL"
480 INK 7
490 p 8,23,"--"
500 p 10,23,"--"
510 p 12,23,"--"
520 p 14,23,"--"
530 p 16,23,"--"
540 END DEFine scr1
550 DEFine PROCedure scr3
560 INK#3,2:CSIZE#3,2,0:CLS#3
570 CURSOR#3,80,5:PRINT#3,"*** TYPING IN
STRUCTOR ***"
580 END DEFine scr3
590 DEFine PROCedure enter_chars
600 DIM lett(144):y=0:a=0
610 scr1
620 scr3
630 BEEP snd,30
640 INK 4
650 p 1,11,"ENTER CHARACTERS"
660 INK 2
670 p 3,8,"ENTER EACH LETTER TO BE"
680 p 4,11,"TESTED ON IN TURN"
690 INK#3,7
700 FOR a=0 TO 144
710 IF a>143 THEN a=143
720 REPeat loop
730 IF a>0:check_keys:ELSE l=CODE(INKEY$
)
740 IF l=194 AND a>0:a=a-1:CURSOR#3,(a*1
2+10)-(y*432),y*10+14:PRINT#3," "
750 IF l>31 AND l<192:EXIT loop
760 END REPeat loop
770 lett(a)=l
780 IF a>=(y+1)*36 THEN y=y+1
790 CURSOR#3,(a*12+10)-(y*432),y*10+14:P
RINT#3,CHR$(l)
800 NEXT a
810 END DEFine enter_chars
820 DEFine PROCedure normal_mode
830 scr1
840 BEEP snd,30
850 INK 4
860 p 1,13,"NORMAL MODE"
870 INK 2:CSIZE 2,1
880 p 2,10,"Press"
890 INK 7
900 REPeat sloop
910 l=lett(RND(0 TO a-1))
920 p 2,19,CHR$(l)
930 REPeat xloop
940 check_keys
950 IF l=i:BEEP snd,10:EXIT xloop
960 IF i<>0 AND i<>l:BEEP snd,100
970 END REPeat xloop
980 END REPeat sloop
990 DEFine PROCedure speed_test
1000 ri=1:wr=0
1010 scr1
1020 BEEP snd,30
1030 INK 4
1040 p 1,13,"SPEED TEST"
1050 INK 2
1060 p 4,9,"PRESS SPACE TO START"
1070 REPeat loop
1080 check_keys
1090 IF i=32:EXIT loop
1100 END REPeat loop
1110 BEEP snd,30
1120 INK 2:CSIZE 2,1
1130 p 2,9,"    Press          "
1140 INK 7:CSIZE 2,0
1150 stdate=DATE-1
1160 REPeat sloop
1170 l=lett(RND(0 TO a-1))
1180 CSIZE 2,1
1190 p 2,19,CHR$(l)
1200 CSIZE 2,0
1210 REPeat loop
1220 p 8,23,INT((ri+wr)*12/(DATE-stdate)
)&" "
1250 p 12,23,(60-(DATE-stdate))&" "
```

```
1240 IF DATE-stdate=s$:EXIT sloop
1250 check_keys
1260 IF i=1:BEEP snd,10:ri=ri+1:EXIT loo
p
1270 IF i>0 AND i<>1:BEEP snd,100:wr=wr+
1
1280 p 10,23,INT(ri/(ri+wr)*100)&" "
1290 END REPeat loop
1300 END REPeat sloop
1310 BEEP 30000,150,60,12,13,2,3,4
1320 INK 2:CSIZE 2,1
1330 p 2,12,"OUT OF TIME"
1340 REPeat loop
1350 check_keys
1360 END REPeat loop
1370 END DEFine speed_test
1380 DEFine PROCedure game
1390 scrl
1400 BEEP snd,20
1410 score=0:str$=""
1420 FOR t=1 TO 4
1430 str$=str$&CHR$(lett(RND(0 TO s-1)))
1440 NEXT t
1450 INK 4
1460 p 1,12,"the GAME ###"
1470 INK 2
1480 p 4,9,"PRESS 0-9 for LEVEL"
1490 REPeat loop
1500 check_keys
1510 IF i>47 AND i<58:lev=i-48:EXIT loop
1520 END REPeat loop
1530 INK 7
1540 p 14,23,' '&score
1550 p 16,23,' '&lev
1560 INK 2
1570 p 4,9,"PRESS SPACE TO START"
1580 REPeat loop
1590 check_keys
1600 IF i=32:EXIT loop
1610 END REPeat loop
1620 INK 2:CSIZE 2,1
1630 CURSOR 72,35:PRINT"=
     "
1640 INK 7:CSIZE 2,0
1650 REPeat sloop
1660 l=lett(RND(0 TO s-1))
1670 str$=str$&CHR$(l)
1680 IF LEN(str$)>27:EXIT sloop
1690 INK 7
1700 p 4,34-LEN(str$),str$
1710 p 14,25-LEN(score),score
1720 FOR t=1 TO 61-lev*6
1730 IF LEN(str$)=0:i=-1:ELSE check_keys
1740 IF i>0 AND i<>CODE(str$(1))
1750 BEEP snd,100
1760 str$=str$&CHR$(lett(RND(0 TO s-1)))
1770 END IF
1780 IF i=CODE(str$(1))
1790 BEEP snd,30
1800 score=score+INT(lev*5)
1810 INK 2
1820 p 4,34-LEN(str$),"s"
1830 PAUSE 15
1840 p 4,34-LEN(str$)," "
1850 IF LEN(str$)>1:str$=str$(2 TO):END
IF
1860 END IF
1870 NEXT t
1880 IF lev<10:lev=lev+.1
1890 END REPeat sloop
1900 BEEP snd*20,100,200,200,1,8,0,6
1910 REPeat loop
1920 check_keys
1930 END REPeat loop
1940 END DEFine game
1950 DEFine PROCedure sound
1960 sndq=NOT sndq
1970 snd=sndq*1000+1
1980 BEEP snd,30
1990 END DEFine sound
2000 DEFine PROCedure p(y,x,n$)
2010 AT y,x:PRINT n$
2020 END DEFine p
2030 DEFine PROCedure check_keys
2040 i=CODE(INKEY$)
2050 IF i=232:enter_chars
2060 IF i=236:normal_mode
2070 IF i=240:speed_test
2080 IF i=244:game
2090 IF i=248:sound
2100 END DEFine check_keys
```

Mix your modes

Different modes on the 464 with this machine code program

by Brian Cadge

A very powerful feature of the Amstrad computers is their ability to display different parts of the screen in different modes. Anyone who has seen *Sorcery* will know just what can be achieved using mixed modes in *Sorcery* the top half of the screen is in Mode 0, giving 16 colours for the graphics, whilst the bottom of the screen is in Mode 1, for normal column text in four colours.

Mixing modes is achieved by changing the hardware registers during an interrupt which occurs every 300th of a second. This method allows the normal screen to be split up into four separate sections, each of which can be displayed in any mode. The Operating System of the CPC handles all the different interrupts, and converts them to their software equivalents of 'Events'. An event caused by the 300th of a second interrupt is called a 'Fast Ticker Event'.

The program presented here adds three new commands to Basic to allow sophisticated mixing of modes on screen. To use the new commands you will need to type in the Basic Loader Program. As usual take care with the Data statements and save a copy before running.

The demonstration program listed is well worth typing in as well, as this will help you to understand the use of the new commands. It simply sets up a screen showing a section in Mode 2, 80 columns, another in Mode 1, 40 columns, and the rest in Mode 0 with some pretty graphics in 16 colours – all on the screen at once!

The three new commands are all RSX commands. These are commands which start with a '|' character, obtained from the keyboard by *Shift/@*. The new commands are described below.

SETMO,section,mode – The *|Setmo* command is used to set up the various portions of the screen to the different modes. The top quarter of the screen is portion zero, and the bottom quarter is three. The mode number is as normal 0-2.

|Setmo can take any number of portion settings, see Line 80 of the demonstration program. For example, to set the top quarter of the screen to Mode 0, and the next quarter to Mode 2 you would type *|Setmo,0,0,1,2*.

The *|Setmo* command displays the mixed modes but if you try printing to any portion the *OS* still thinks you are in the original mode. A new command *|SMODE,x* has been added to tell the OS what mode you want to write in, 'x' being the Mode number 0 to 2. This command does exactly the same as the normal mode command, except that the screen is not cleared. There is no point in using *mode* when the mixed modes are being displayed as any new mode set up will be overwritten by the fast ticker event.

Finally, to get back to one mode and disable the fast ticker event, use the *|Normal,n* command. This sets the whole screen to mode 'n'. It is also useful to use *|Normal* before the *|Setmo* command as this sets up the mode for any section of the screen not included in the *|Setmo* list.

The demonstration program should make it pretty clear how to print and produce graphics in the various modes once set up with *|Setmo*. In all cases, after using *|Setmo* to set what mode you want to write in, you should set up a window which covers the section of the screen in this mode, see Line 70 of the demonstration program for example. Using windows is a convenient method of ensuring that you do not spill over into another section of the screen which may be displayed in a different mode. It is also important that you do not cause the screen to scroll as this would wreck the synchronisation between screen Ram and mode switching.

As the program uses interrupts for all its timings, and interrupts are turned off during cassette and disc operations, you will not get a satisfactory result if you try to mix modes whilst reading or writing to cassette or disc. All other Basic commands and functions can be used as normal with this program running.

The possibilities for use of this program are almost endless, from games to business programs, using a split screen to display complex pie charts in 16 colours in one section of the screen, whilst another section displays statistics in the 80 column mode.

```
10 'Mixed Modes Basic Loader Program
20 MEMORY 42300
30 FOR i=42301 TO 42521
40 READ a$:v=VAL("&"+a$)
50 cs=cs+v:POKE i,v
60 NEXT i
70 IF cs<>23328 THEN PRINT"DATA ERROR -
Check listing";CHR$(7):STOP
80 CALL 42301:CLS:PRINT"Mixed Modes comm
ands loaded - You can   now NEW this pro
gram.":END
90 DATA 01,52,A5,21,2B,A6,CD,D1,BC,3E,00
,32,2F,A6,2A,EC,BD,22,20,A6,C9,5D
100 DATA A5,C3,6E,A5,C3,DC,A5,C3,F7,A5,5
3,45,54,4D,CF,4E,4F,52,4D,41,CC,53
110 DATA 4D,4F,44,C5,00,CB,47,20,43,B7,2
8,40,F5,DD,7E,02,FE,06,30,2B,06,00
120 DATA 4F,21,1A,A6,09,DD,7E,00,77,3A,2
F,A6,B7,20,1A,3E,FF,32,2F,A6,3E,00
130 DATA 32,19,A6,21,22,A6,06,81,0E,00,1
1,B6,A5,CD,19,BD,CD,E0,BC,F1,DD,23
140 DATA DD,23,DD,23,DD,23,3D,3D,20,C0,C
9,3A,19,A6,3C,32,19,A6,47,FE,06,20
150 DATA 06,3E,00,32,19,A6,78,21,1A,A6,3
D,06,00,4F,09,7E,D9,CB,89,CB,B1,B1
160 DATA 4F,ED,49,D9,C9,21,22,A6,CD,E6,B
C,3E,00,32,2F,A6,21,1A,A6,06,06,DD
170 DATA 7E,00,77,23,10,FC,CD,0E,BC,C9,2
1,0A,A6,22,EC,BD,DD,7E,00,CD,0E,BC
180 DATA 2A,20,A6,22,EC,BD,C9,CD,06,B9,C
D,4F,0D,21,00,00,CD,3C,0B,C3,3C,0D
190 DATA 00
```

```
10 'Demo program for mixed modes
20 ON ERROR GOTO 200
30 ON BREAK GOSUB 230
40 BORDER 0:INK 0,0:INK 1,13:INK 2,26:IN
K 3,6
50 |NORMAL,1:REM Set to mode 1
60 CLS:|SETMD,0,2,1,0,2,0,3,1:REM Split
modes
70 |SMODE,2:WINDOW 1,80,1,5
80 PEN 0:PAPER 1:CLS:PRINT:PRINT"  ";STR
ING$(76,42):PRINT"  *This is an example
of the split screen modes on the CPC464,
 this is mode 2*":PRINT"  ";STRING$(76,"
*")
90 |SMODE,1:WINDOW 1,40,20,25
100 PEN 2:PAPER 3:CLS:PRINT:PRINT"
 Mode 1, 40 columns window.":LOCATE 9,4:
PEN 1:PRINT"Popular Computing Weekly":PE
N 1:PAPER 0
110 |SMODE,0:ORIGIN 0,120:WINDOW 1,20,6,
19
120 PEN 6:LOCATE 2,13:PRINT"Press a key
to CLS"
130 DEG:FOR i=1 TO 500
140 IF INKEY$<>"" THEN CLS:GOTO 120
150 col=INT(RND(1)*15+1)
160 x=INT(RND(1)*600):y=INT(RND(1)*160)+
20
170 FOR a=0 TO 360 STEP 30:PLOT x,y,col:
DRAW x+20*SIN(a),y+20*COS(a),col:NEXT a,
i
180 |NORMAL,1
190 END
200 IF ERR=28 THEN PRINT"You must run th
e loader program before  running this de
mo!":STOP
210 PRINT"Error";ERR;"at line";ERL
220 END
230 PEN 1:PAPER 0:|NORMAL,1:PRINT"*BREAK
*":END
```

Peek & Poke



Joystick tape

Brian Cheadle of 68 Caverleigh Way, Worcester Park, Surrey, writes

Q I would value your advice on what, alas, these days is probably all too familiar to a lot of your readers, namely what happens to your hardware when the firm goes bust?

I have a Spectrum and a Cambridge Computing Research joystick. Unfortunately my two year old has destroyed the tape containing the software to drive the joystick.

What can I do? Do you know anyone who could sell me the tape? I hope you can help me or I'll have £20 of useless hardware.

A Getting hold of a copy of the joystick tape should present no problem as long as you can find someone who has got a copy. I have printed your address so that anyone reading this will be able to get in touch with you easily.

Loading problems

B R Platt of Bourne End, Buckinghamshire, writes

Q I have always experienced a lot of difficulty loading and saving to and from my BBC micro using a tape recorder, so much so that I always save anything of importance twice using different tape recorders. This is a problem I have not had with my Spectrum which always saves and loads perfectly.

I are considering purchasing a disc drive for the BBC but are reluctant to spend over £200 (including interface) in case I get similar loading and saving problems with discs.

Do you think my fears are justified?

A Disc is a far more reliable storage medium than tape. The incidence of loading or saving failures will be only a fraction of that experienced on even the best cassette tape recorders.

I do not think that your concern is really justified and I think that you will have countless error-free hours when you have installed your discs.

Arabian Spectrum

A J Green of South Wirrall, writes

Q I hope to get a contract in Jeddah, Saudi Arabia, and I would like to take a Spectrum with me. I are very handy with a soldering iron. Please give me advice as to the modifications required to run a Spectrum with Saudi TV (or must I use a monitor?).

I understand that the 200 volt power supply is sufficient to run the computer and that a change of modulator is be required.

A Well, funnily enough I am a bit of an expert in this particular field!

The Spectrum requires no modifications at all to allow its use in Saudi Arabia. The TVs available in Saudi are very similar to those available in England, although you should take care not to buy an NTSC or SECAM only colour TV. The power supply is either 220 or 110 volts (depending on where you live). 220 volts supply is OK, but if you have a 110 supply you will need to buy a transformer to lift the power up to 220 volts. These are readily available in Saudi and cost about £4.

Apart from that, your only problems are going to be power cuts!

Alternetive routines

As premised, this is Miner Willy week again in the Avenue – there's a lot to do, and we may not fit it all in so let's cut out the chat. First off from Paul Miler for the Spectrum Run this short program and play the tape – the game will load and then stop, you can then enter your *Pokes*

```
20 paper 0 : Ink 0 . Border 0 :
Clear 64990
30 For A=65000 to 65032
40 Read 8 . Poke A,5
50 Next A
60 Randomise Usr 65000
70 Data 211, 33 0, 84, 17, 66,
188 62, 256, 85 206, 88 5, 243,
48, 2 40
80 Data 33, 6, 254, 17, 167, 100
1, 58, 0, 237, 176, 195, 0, 91,
195 28,16
```

Poke 31224, 201 indestructable willy; *Poke* 30019,255 infinite lives, *Poke* 34686,x x is no. of objects to collect, *Poke* 30027,x x is start room number, *Poke* 31697,x max no of monsters per room, *Poke* 33760,0 trip switch on. The monsters are stored from 54433 to 54128 and like JSW they can individually be deleted by poking the numbers with zero, eg 54465 – 54498 is the barrel. A full list will be in the *Arcade Addicts Handbook*. I hope you have all ordered a copy – choc full of *Pokes* PLUS a complete beginners guide to do it yourself games hacking!

Now in answer to the plea for cheat routines for BBC *Manic Miner*, gratefully received from Clare Hallworth of Altrincham. Enter the following lines carefully and have the *Manic Miner* tape in the cassette player with motor control engaged if possible, otherwise be prepared to turn it on and off.

Load "Manic" then enter this.

```
10* FX13,4
20 P% = &70 [OPT0 PHP. PHA.
TXA PHA TYA PHA LDA &
3CA AND£&FE STA &3CA
LDA £0STA &3C7 PLA. TAY
PLA TAX PLA PLP. RTS ]
30 ?&220=&70: ?&221 = 0
*FX14, 4
Run
*Load Miner1 (start tape)
*FX13,4
?&74CB=&4C
Call &7475 Wait until miner3
has loaded and stop tape
*FX13,4
?&2E03=&4C
Call &2D00 Wait until miner6
has loaded and stop tape
?&309F=&FF
?&30EF=&15
?&6200=&F0
?&6201=&D5
Call &618A
```

The game should now commence as usual. When the initial title screen appears do not press return otherwise it will crash. Wait until the demo mode starts and press return when the screen you wish to start at displays. You will have 250 lives. It is safe to press return on the title screen of future games but you will be returned to the screen you just left with only two lives.

To return to screen press *Escape* and wait until demo mode is entered.

Now for the MSX JSW from our friend John Lydon-Smith of Johannesburg

Poke &H8D4D,0 to be immune to moving sprites
Poke &H8A1A,10 turns of all conveyor belts
Poke &H9C5A,0 infinite lives
Poke &H9BF1,201 turns off the clock
Poke &H93E8,X X=0 to 255 to change the noise made
Poke &H93E3,0 for a surprise effect
Poke &H9C00,201 makes Willy totally invincible even in Hades
Poke &H97E1,X where x is the number of items to collect before finishing. To enter these *Pokes* use this program

```
10 Clear 0,&H8500 Screen
1,1,1
20 Bload "cas"
DEFUSRO=&HA4EA
30 Rem enter your pokes
here
40 Z-USR0(0) Also try printing
out text held within memory
locations &H9D71 to &HD000
```

Finally try a truly excellent routine for the Amstrad from Nicholas Mew (I think) of Warwick. This alternative routine for getting into JSW is longer than the one we have published already but offers lots of excellent features. If you don't want to use any of the *Pokes* herein just find the appropriate Rem statement and delete it from the listing.

This routine also allows you to enter two secret rooms in the game, one is called *Cheat* and the other doesn't really count because as soon as you get there the game crashes – if you want to see it you must jump on a pansy and upwards from Central Cavern.

Manic Miner from Software Projects

The routine also gives you a teleport option – to use it you must press T when playing – the action will freeze. Then type in a three figure number, eg, 007 and you will jump to a room.

The option to start at any room works on a similar principle except that you must remove 1 from the room number you use with the teleport. At present in the listing it is set to the bathroom (no 31) but you can change the number to go elsewhere

```
10 Memory 32000 LOAD""
Mode 1
20 For n=49152 TO 49287
Read a$
30 Poke n,VAL("&"+a$):
Next n
40 addr=59236
50 Read a.Read b Read c
60 IF b=0 Then Call 49152
70 Poke addr,a Poke addr
+1,b
80 Poke addr+2,c addr=+3
90 Goto 60
100 Data 21,14,80,e5,11,d2,ae
110 Data 01,12,01,ed,b0 e1,11
120 Data 64,00,0e,2c,ed,b0,21
130 Data 6d,00,22,80,00,3e, c3
140 Data 32,92,00,21,28,c0,22
150 Data 93,00,c3,60,00,dd,21
160 Data 88,c0,21,5a,c0,11,82
170 Data 80,ed,83,f4 60 01,2e
180 Data 00,ed,b0 3e,c3 32,f3
190 Data 86 21 f8 07 22,4e,81
200 Data 0e,03 dd,6e 00 dd,66
210 Data 01,dd,7e,02,77,b4,ca
220 Data 4a,ac,dd,098,18,ea,
d2
230 Data 44,83,f8,30,fe,74,c3
240 Data f8,96,cd,b6,bc,21,03
250 Data 00,cd,19,bb d8,30,fe
260 Data 0a,30,f7,09,0a,64,10
270 Data fd,67,2d,30,ee,3d,fe
280 Data 86,d2 ed,86,22 f8 78
290 Data c3 8b 87
300 '
310 Rem inf lives/exit death
320 Data 169,130,62,166,130,
66 167,130,205,188,130,30,
169,130,187,170,130,194,
171,130,219,172,130,126,
173,130,69
330 Rem start room
340 Data 94,130,31
350 Rem objects to collect
360 Data 33,151,175
370 Rem no of lives
380 Data 240,129,7
390 Rem drop any height
400 Data 130,133,0
410 Rem immunity to killer
objects
420 Data 6,133,0,21,133,0,
93,133,0,201,131,0
430 Rem walk on water/killer
objects
440 Data 242,131,354,243,
131,3,244,131,220,245 131,
186,246,131,144,247,131,
62,140,131,4,249,131,40,
250,131,6
450 Rem immunity to
monsters
460 Data 125,142,0
470 Rem turn off monsters
480 Data 143,141,201
490 Rem play final room
500 Data 0,154,201
510 Rem trip switch on (get to
island more easily)
520 Data 170,169,0
530 Rem end data marker DO
NOT DELETE
540 Data 0,0,0
```

Tony Kendle



Imaginary world

I was talking the other week about atmosphere in adventures I feel that this intangible part of the adventure game, so hard to define, can make all the difference between a great adventure and just another tough puzzle

I leant then towards scene-setting via location descriptions, both text and graphic But there is another way for the adventure-writer to convince the player that he lives in the imaginary world – to suspend disbelief Atmosphere can be fashioned by passive means – the pictures and evocative text that we have discussed already – or by active participation That is, by direct player/computer inter-reaction.

The earliest adventures, and many more recent examples, accepted only two-word input from the player, the well known verb/noun construction, as in *"Get Sword", Drop all"* and so on. While this form of communication has the advantage of brevity, many of the problems that players have found with adventures arise from this inflexible mode of command.

I got round to thinking of all this while looking at a new QL program, soon to be released by Sinclair via Magnetic Scrolls (a new software house) Called *The Pawn*, it raises the level of player/computer interplay to new heights

"You wake up on a sunny August morning with birds singing and the air fresh and clean. However, your joints are stiff and you have not woken up in your bedroom as you would have expected " So begins the adventure In this case the location descriptions are long and atmospheric – this opening scene-setting goes on for another couple of screens before you get to the first prompt of the game

The authors of *The Pawn* are, I know, great fans of Infocom's great adventures, and the influence is seen in the general layout of this program. A very legible re-designed character set is employed (normally green on black, but this may be changed to white on black for greater contrast), and the location name is at top-left with the moves/score tally at top-right, just like Infocom

The general proceedings are similar, too, even down to the *Verbose* and *Brief* commands, which respectively reel out the complete description every time you visit a location or a short, one sentence description. *Normal* gives a full description on the first visit to a location and a brief description thereafter

It's a pity that another Infocom command, *Script*, is not supported – this command prods the printer into action, so that not only does the player have an on-screen report of what is going on, but s/he can take away a transcript of the story and study it while brushing his or her teeth

Other commands are fairly standard, although *Exit* is still rather unusual, giving of course a list of the possible exits, which makes a change from having to *"look"* again. Other rarely seen commands are *Contrast*, which gives the more legible white-on-black text, and left and right margin shifts, allowing the player to move the margins around the screen to suit the monitor This last is not often seen outside Scott Adams adventures, but is a godsend on the QL

System commands

An abundance of recognised system commands make life a lot easier for the adventurer, but a good parser is essential The parser is that part of the program that takes your input and scans the sentence for a sequence of words upon which it can act

The authors of the present adventure, Magnetic Scrolls, are justifiably proud of their parser, comparing it favourably with that of Infocom With this program, you will not have to work out how best to pick up all the ribbons except the red and purple ones, put the magenta ribbon into your pocket, tie the blue ribbon onto the green watering can and then unlock and open the wooden door and walk into the gardening shed.

In *The Pawn*, all this can be done with one command, and even longer constructions are possible The input scanning routine is fairly sophisticated, forgiving your bad typing and bad grammar, and filling in the gaps with a guess at your meaning This is much like playing an Infocom adventure, although I would say that *The Pawn* seems even more approachable and easy to communicate with. But it has the annoying habit of finding one word of the 200 unrecognisable and as a consequence rejecting the whole command.

Among the welter of system commands, it would have been nice to have a *Repeat* command, one which I've never yet seen but must surely be fairly simple to implement, this would give the invaluable facility of re-displaying the last command so that mis-typed or unrecognised words may be edited.

Traditional features

Having said all that, the multiple command facility is useful, and I found myself using it more often in this game than others I managed to confuse the parser a couple of times by doing deliberately stupid things, but it is quite able to handle any sensible input. There is also a lot of humour in the computer's replies, although the reply to *Help* is a little predictable ('I don't know, why don't you try tap-dancing?' – 'Tap dance' – 'I don't understand tap dance'! The parser isn't *always* so clever!)

What about the adventure itself? It's no good having such a sophisticated framework to a poor scenario The story of *The Pawn* is left deliberately vague by Magnetic Scrolls, and it is up to the player to find out what his goals are and how to achieve them. Most of the traditional features are here – dragons, gold coins, alchemists, the obligatory magician – and all make an appearance

On my third play-through (and I was just beginning to get somewhere!), the dreaded Bad or Changed medium raised its very ugly head, and that, I'm afraid, was that

This is my major misgiving about the program – the authors have decided not to offer a cloning facility, which surely is essential on the QL.

Other programs allow the purchaser to make a back-up thereafter using the clone in conjunction with the master cartridge to run the program, on the assumption that only a tiny part of the tape is going to become crunched, leaving many sectors clear and able to boot the copy Without the master, a pirate will still not be able to use the copy

However, *The Pawn* is certainly a major release for the QL. No information yet on price and release date, or indeed, what the packaging will look like, but I hope that it will be cheap, soon and lavish!

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5	(–)	Dragon Torc	(Hewson Consultants)	£9.95
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Commodore 64

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9	(–)	Action Biker	(Mastertronic)	£1.99
10	(5)	Hypersports	(Imagine)	£7.95

All figures compiled by Gallup/Leisurescope

Top Twenty

1	(1)	Way of the Exploding Fist *(Spectrum/C64/Amstrad)*	Melbourne House
2	(3)	Frank Bruno Boxing *(Spectrum/C64/Amstrad)*	Elite
3	(2)	Daley Thompson's Super Test *(Spectrum)*	Ocean
4	(–)	Fighting Warrior *(Spectrum)*	Melbourne House
5	(4)	Now Games *(Spectrum/Commodore)*	Virgin
6	(5)	Summer Games 2 *(Commodore)*	Epyx/US Gold
7	(17)	Action Biker *(Commodore)*	Mastertronic
8	(6)	Sky Fox *(Commodore)*	Ariolasoft
9	(15)	Fairlight *(Spectrum)*	The Edge
10	(12)	Beach Head *(Spectrum/Commodore/Amstrad/BBC)*	Access/US Gold
11	(18)	Karateka *(Commodore)*	Ariolasoft
12	(–)	Bored of the Rings *(Spectrum/Commodore/BBC)*	Silversoft
13	(10)	Barry McGuigan World Championship *(Commodore)*	Activision
14	(7)	Finders Keepers *(Spectrum)*	Mastertronic
15	(8)	Frankie goes to Hollywood *(Spectrum/Commodore)*	Ocean
16	(11)	Hypersports *(Spectrum/Commodore)*	Imagine
17	(9)	Formula One Simulator *(Spectrum/Commodore)*	Mastertronic
18	(13)	BMX Bikers *CSpectrum/Commodore)*	Mastertronic
19	(13)	Beach Head 2 *(Commodore)*	Access/US Gold
20	(–)	Graham Gooch Test Cricket *(Spectrum/Commodore)*	Audiogenic

Figures compiled by Gallup/Leisurescope

Readers' Chart No 45

1	(1)	Way of the Exploding Fist (Spectrum/C64/Amstrad)	Melbourne House
2	(2)	Hypersports (Spectrum/C64)	Imagine
3	(9)	Frankie Goes To Hollywood (Spectrum/C64)	Ocean
4	(–)	Daley Thompson's Supertest (Spectrum)	Ocean
5	(10)	Nightshade (Spectrum)	Ultimate
=	(–)	Karateka (Commodore)	Ariolasoft
7	(–)	Soft Aid (Commodore 64/Spectrum)	Soft Aid
8	(–)	Now Games (Commodore 64/Spectrum)	US Gold
9	(3)	Summer Games II (Commodore 64)	US Gold
10	(4)	Red Moon (Various)	Level 9

Winning phrase No 45: "We see poxy 'Lord of the Rings' hype" from Graham Smith of Leeds who wins £25

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You can still vote in the chart without making up a slogan – but you won't be in with a chance of winning the prize

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP

Voting for Week 47 closes at 2pm on Wednesday October 16 1985 Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final Only one entry per individual per week will be allowed

Name .... **My top 3: Voting Week 47**

Address .... 1..

.... 2..

.... 3..

My phrase is: ....

New Releases

UNIMPORTANT

Trivia from Anirog Software is only the second program I've seen based on the incredibly popular and vastly overpriced board game *Trivial Pursuit*. The idea of the game is to correctly answer a vast number of questions about utterly unimportant topics The fun from the game derives precisely from the banal nature of the questions. They require the sort of worthless information that we all accumulate, but is never usually tested.

This computer version of the game has one major virtue which is the storage (in four separately loaded chunks) of over 1 400 questions Beyond that the game has nothing to recommend it – the screen layout is clumsy and messy the kind of thing you might see from the most basic of basic programs It also requires two players or more who have to answer the questions aloud, the computer provides the answer and you tell it whether you got the question right or wrong

I realise there are obvious problems with a play against the computer option' and that having to type in the answers might involve problems of recognition when answers aren't expressed in the exact form the computer has stored them Nevertheless, beyond the process of typing in those 1,400 questions, there's the feeling that no effort has been put into this one – it's a big database and no more If all you want is 1,400 questions then this is OK. As a complete fully presented game, it's poor

Program *Trivia*
Price *£7 95*
Micro *Amstrad*
Supplier *Anirog*
Unit 10
Victoria Industrial Estate
Victoria Road
Dartford
Kent DA1 5AJ

AIR CONTROL

Cascade Games are claiming quite a lot for *Ace* – the Air Combat Emulator Things like 'without doubt the most stunning flight simulator ever produced' Just the sort of stuff to make you hate the game immediately

Actually *Ace* is one of the best flight simulators I've seen. The reason is that it is one of the most playable, There are just about enough elements to justify the term simulator, but in the end the game is about flying and zapping rather than dealing with a million controls from flaps to please extinguish your cigarettes

There are a host of good features to the game, some speech you can understand, good use of Sid chip for engine noises and good to very good graphics There are options for night and winter flying (everything goes white)

Pick of the week

ACTION MUSIC

The Edge's *Wizardry* is, I would say, being slightly overshadowed by all the attention being paid to *Fairlight* by the same company It is, however, a superb game, a little like Ultimate's *Entombed* but with marginally better graphics and a superb soundtrack

Soundtrack is really the right description for the way sound is used in the game It doesn't merely add up to a few pretty tunes, but is instead a commentary on the action – it gives you clues on danger areas and moments of peace when you can think Through the use of motifs you are given some clue to the possible behaviour of an unknown new creature – Richard Wagner, eat your heart out

Graphically, the game features a Zaxxon like edge-on display of the walls and chambers of a castle There are a whole host of strange creatures, secret passages, trapdoors, spells and all the other ingredients of a true *Dungeons and Dragons* cast and blast

The task is to overcome a series of problems and reach the last level of the castle individual levels are each protected by guardians, for the first level, watched over by a Minotaur, there is an elaborate solution given in the manual It makes you realise just how much effort the game is going to require

The more I play *Wizardry*, the better it seems

Program *Wizardry*
Price *£9 95*
Micro *Commodore 64*
Supplier *The Edge*
12/13 Henrietta Street
London
WC2E 8LH

This Week

Program	Type	Micro	Price	Supplier
Amstrad Hits 10	Arc	Amstrad	£9.95	Beau – Jolly
Trivia	B	Amstrad	£7 95	Anirog
BBC Hits 10	Arc	BBC	£9 95	Beau – Jolly
Intersheet	Ut	BBC	£49 00	Computer Concepts
High Rise Horror	Arc	BBC B	£3 95	Rabbit
Sorderon's Shadow	Ad	Commodore 64	£9 95	Beyond
Batalyx	Arc	Commodore 64	£12 95	Ariolasoft
C64 Hits 10	Arc	Commodore 64	£9 95	Beau – Jolly
C64 Hits 6	Arc	Commodore 64	£6 95	Beau – Jolly
Derlath	Arc	Commodore 64	£3 99	Rabbit
Scarabaeus	Arc	Commodore 64	£12 95	Ariolasoft
Spy vs Spy 2	Arc	Commodore 64	£9 95	Beyond
Wizard	Arc	Commodore 64	£12 95	Ariolasoft
Zyto	Arc	Commodore 64	£9 99	Rabbit
Ace	S	Commodore 64	£9.95	Cascade Games
Music Construction	Ut	Commodore 64	£9 95	Ariolasoft
Shadow Tuner	Ut	Commodore 64	£3 50	Beyond
Electron Hits 10	Arc	Electron	£9 95	Beau – Jolly
MSX Hits 6	Arc	MSX	£6 95	Beau – Jolly
QL Hyperdrive	Arc	QL	£14.95	English Software
Hisoft C + +	Ut	QL	£39.95	Hisoft
Rupert and T Party	Arc	Spectrum	£7 95	Quicksilva
Spectrum Hits 10	Arc	Spectrum	£9 95	Beau – Jolly
Spectrum Hits 6	Arc	Spectrum	£6 95	Beau – Jolly
The Gt Fire of Ldn	S	Spectrum	£3 99	Rabbit
Shadowfire Tuner	Ut	Spectrum	£3 50	Beyond
Word Manager	Ut	Spectrum	£12.95	Ariolasoft

Key Ad – adventure S – strategy simulation
Arc – arcade Ut Utility Ed education

New Releases

and even an option for a co-pilot (a friend on second joystick operates things like undercarriage and weapons select)

You get to kill things in the air, ground and sea and (rather spectacular, this) refuel in mid-air. A map display shows you where everything is and that speech comes in at times if you are flying dangerously, eg, in danger of stalling or whatever.

Ace may not be the most awesome flight simulator in the universe, like the blurb says, but it is surely one of the most fun.

Program *Ace*
Price *£9 95*
Micro *Commodore 64*
Supplier *Cascade Games*
1-3 Haywra Cres
Harrogate
North Yorkshire
UGI 5RG

NUTWOOD

Rupert and the Toymakers Party, graphically stunning on the Commodore 64, is, inevitably, less impressive on the Spectrum with that machine's inability to deal with more than two colours at once.



The game is essentially *Manic Rupert*: collect the party invitations, dodge the little guards men, trains and other toys, jump up to different levels and on to the next screen.

I like *Rupert* very much on the Commodore – perhaps because of the excellent and stylish graphics that really did echo the famous comic strip. On the Spectrum, however, things are different. Colour attribute problems cause the game to look very inferior and even horror of horrors, causing Rupert's bright red jumper to change colour. Wasn't jumper colour continuity written into the contract?

On the end, poorish graphics and naff sound make this look like a budget game at best, a passable half hour's worth of entertainment at most.

Program *Rupert and the Toymakers Party*
Price *£7 99*
Micro *Spectrum*
Supplier *Quicksilva*
Liberty House
22 Regent Street
London NW1R 7DB

COMPLICATED

Saving the Universe is getting more complicated all the time. Gone are the days when a straight left/right with the joystick and a quick trigger finger would do. No such luck with the latest release from Hewson – *Astro-Clone*.

Written by Steve Turner (of *Avalon/Dragontorc* fame) it certainly packs a lot into 48K. Defending the Earth from marauding invaders is divided into three stages, the Strategic phase in which you disperse of your forces throughout the galaxy, the Space Combat phase and finally a Ground Combat phase where you explore and disable the bases – all in glorious 3-D.

On first impression, I'd say the ground combat phase is, if anything, better than *Avalon* graphically with the added bonus of icon driven lasers and tricky puzzles.

I enjoyed playing this – but while trying to appeal to everyone maybe it stands the chance of pleasing no-one. Not for devoted purists of any particular genre then but certainly one of the better releases this year on the Spectrum.

Program *Astro-Clone*
Price *£7 95*
Micro *Spectrum*
Supplier *Hewson Consultants*
565 Milton Trading Estate
Abingdon
Oxon

HOOKED

Virgin Games has just launched a range of cheapish software titles using the Rabbit label. They cost £3 99 each and have been titled better than budget' to make it clear that though cheap, Virgin consider them to be well above the usual quality of such games.

Doriath for the Commodore 64 seems to vindicate Virgin's assertions. It's a caverns and ladders affair with magic potions, a nice variety of spells, various nasty guards and wizards and a particularly large dragon.



It looks a little like *Sorcery*, you are a wizard and along the top of the screen your stamina and wisdom are presented as a percentage. Various actions (discover them for yourself) add or subtract from these figures.

The graphics are good, especially the backgrounds which are nicely detailed, and though there is nothing new here, there's still plenty to keep one hooked. A fairly auspicious start to Virgin's new range, I'd say.

Program *Doriath*
Price *£3 99*
Micro *Commodore 64*
Supplier *Virgin Games*
2-4 Vernon Yard
119 Portobello Road
London W11 2DX

This Week

Anirog, Victoria Industrial Park Victoria Road Dartford, Kent DA1 5AJ, 0322 92513 **Ariolesoft,** Retail **Beau – Jolly,** 19A New Broadway, Ealing London W5 5AW 01-567 9710 **Beyond,** Lector Court 153 Farringdon Road London WC1R 3AD, 01-837 2899 **Cascade Games,** 1-3 Haywra Crescent Harrogate North Yorkshire HC1 5DG 0423 504526 **Computer Concept,** Gaddesden Place, Hemel Hempstead, Herts HP2 6EX, 0442 63933 **English Software,** 1 North Parade Parsonage Gdns Manchester M60 1BX 061 835 1358 **Hisoft,** 180 High Street North Dunstable Beds LU6 1AT 0582 696421 **Quicksilva,** Palmerston Park House, 13 Palmerston Road Southampton Hampshire SO1 1LL 0703 20169 **Rabbit,** 2-4 Vernon Yard, 119 Portobello Rd, London W11 2DX, 01-727 8070



The Neck Verse

In the reign of James II there were many crimes which carried the death penalty. Some quite trivial offences, such as larceny to the value of one shilling, were counted as felonies and the perpetrators, when found guilty, were hanged. Through this period of barbarism it was hoped that all England would be kept quiet. Detection was uncertain and justice arbitrary.

In this faltering order there were some who bore special privileges, much like the children who, in a playground, can temporarily escape retribution by calling "pax" or some local derivative. By claiming that they were in holy orders, miscreants could escape the ultimate punishment by passing a test called the Neck Verse.

We can see a modern parallel, a grown up version of the child-like call, in modern businesses. The analogy is particularly evident when the business is large, the technology still relatively in its infancy and the hierarchical structure of relationships somewhat fluid.

Considerable forelock touching is accorded to those who hold the mysticism of data in their machine-blessed hands. The needs of the mainframe and its high priests hold sway. No matter that the theology has been secularised. Woe to those who fail to submit the computer returns in the prescribed format a moment after the cut-off date! Evil to them that inaccurately record a checksum verification!

When next you visit a large corporation or substantial business – just look around you. Are there any employees who appear not to be subject to the same rules as the rest? Do they differ in their hours of work (usually shorter)? Have they taken on radical styles of dress (usually more sharp and trendy)? If you have identified any such cossetted ones, enquire the source of their ordination.

New business problems have arisen and new workers have found themselves in high positions, masters of the enterprise. No humble quill pen pusher of bygone days could have envisaged the age when an electronic record would be supreme and the latter-day clerk be transformed into the Time-Lord.

None of this, of course, applies to the humble micro-user at work. He is as conformist and as submissive as the rest of the plebeian masses. For him, the rules are to be followed. Decentralisation, we find, disseminates and fragments power. The micro-man is obedient for the common good. He suffers the usual fate for sins of commission and omission.

And what was the Neck Verse? An accused person claiming to be a cleric would be handed The Holy Bible. He would be tested on his ability to read with fluency a particular verse from the Old Testament. It was assumed that only those who could successfully do so were educated. Education meant that the person was a priest. Undoubtedly, many otherwise ineligible people could learn the text by heart and fool the testers.

This deservedly popular trial became known in time as the Neck Verse for it saved many precious offenders from damaging their necks on the gallows.

Dare we now say that those who know enough about computer programming and coding, those who claim acquaintanceship with all the secrets of the software and those who keep any insatiable 10-megabyte dragon-beast in control, have some immunity from the consequences of their transgressions? I do hope not. As Orwell might have said – in the business world some computer users are more equal than others.

Rod Dawson

In segments

Puzzle No 126

Jamie was watching the figures changing on his digital wrist watch when he noticed something unusual about three of the digits.

0 1 2 3 4 5 6 7 8 9

The three digits are four, five and six, as these numbers contain as many segments 'lit' in the digital display as is indicated by the number.

This led Jamie to invent a new unit of measurement – the 'segment second'. This is the number of segments lit for any given second, for instance at exactly midnight the display (in hours, minutes and seconds) would read '00 00 00'. This would have a 'segment second' value of 36 as there are six zeros each consisting of six segments. One second later the reading of 00 00 01 would have a value of 32. At this time the *total* number of segment seconds since midnight would be 68. Note that no allowance need be given for any dots which may be present.

Jamie wondered at what time after midnight would the total segment second value reach or exceed one million.

Solution to Puzzle No 123

Dunkins' message reads 'Having a great time see you next week' and he was staying at Ramsgate.

```
10 M$="ZB[RBMLJPMMAJBJKFRRVVHJPUJXLL"
20 INPUT "RESORT";B$
30 P$=B$
40 IF LEN(M$)>LEN(P$) THEN P$=P$+B$:GOTO 40
50 C$=""
60 FOR F=1 TO LEN(M$)
70 V=ASC(MID$(M$,F,1)):W=ASC(MID$(P$,F,1))-64
80 V=V-W
90 IF V<65 THEN V=V+26
100 C$=C$+CHR$(V)
110 NEXT F
120 PRINT M$:PRINT P$:PRINT C$
130 GOTO 20
```

The program contains the encoded message in string *M$*. This is then decoded in the reverse way to the method of coding given in the question. In order to do this it is necessary to input a keyword which, in this case, is a holiday resort.

Winner of Puzzle No 123

The winner is Mal Davis of Kings Norton, Birmingham, who receives £10.

The Hackers








NIGHTSHADE